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Patterns of retirement as reflected in income tax records for older workers

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QSEP

RESEARCH INSTITUTE FOR QUANTITATIVE STUDIES IN ECONOMICS AND POPULATION

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FRANK T. DENTON
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McMaster University
SOCIAL SCIENCES

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Abstract

If *retirement* means a substantial and sustained reduction in the time spent working for pay or profit, measurement requires a definition of *substantial* and sufficient observations of the same individuals to determine whether a transition from “working” to “retired” status has occurred. Using the Statistics Canada *Longitudinal Administrative Databank*, a 20 percent sample of the individual income tax returns of all tax filers since 1980, we identify those with significant labour force attachment at ages 50-52, and follow them year by year. If retired means having no income from employment, the median age of retirement is about 63 for men, 62 for women. That is true for all cohorts. If earning up to half of one’s previous employment income is deemed consistent with being retired, the median age is about 60 for both men and women. Results obtained in this way are consistent with calculations based on Labour Force Survey data.

Key words: retirement, older workers

JEL Classification: J26, J22

Patterns of Retirement

as Reflected in Income Tax Records for Older Workers

Frank T. Denton, Ross Finnie and Byron G Spencer[*]

1. Introduction

There has been a long-term trend among older males towards lower rates of participation in the labour force and hence, it would appear, towards higher rates of retirement. While there has been a partial reversal of that trend in recent years, participation among males 55-64 was almost 10 percentage points lower in 2006 than it had been three decades earlier. Over that same period life expectancy had increased markedly. Thus, roughly speaking, a male who retired at age 65 in 1976, the likely age at that time, could look forward to an expected 14 years in retirement; by 2006, 30 years later, a similar male might have retired at 62, leaving 20 years in retirement.

Concern about the lengthened period of "dependency" associated with earlier retirement is compounded by the size of the baby boom generation: by 2031 all those born during the baby boom will be over age 65 and will constitute one quarter of the Canadian

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population. That gives rise to worries about the sustainability of the health care and pension systems as the demands on them increase in the years ahead. It is often argued that working longer (retiring later) could be part of the solution. Working longer would both extend the period of productive employment (thus adding to national product) and leave fewer years in retirement, thereby reducing the need for pension income.[**]

Some countries have enacted legislation that may encourage later retirement. In Sweden, for example, legislation dating from 1998 means that the age of entitlement to full benefits from the public pension scheme adjusts to reflect gains in life expectancy. A consequence is that later cohorts must remain at work a little longer in order to receive the same pension benefits. Legislation that was passed in the US in 1983, but that took effect only two decades later, is now causing the "normal retirement age" – the age of eligibility for full social security benefits – to increase slowly, from 65 for those born in before 1938 to 67 for those born after 1959. No similar legislation has been introduced in Canada. Instead provisions were passed in 1984 for Quebec and 1987 for the rest of Canada to *lower* the age of eligibility for (reduced) pension benefits under Quebec and Canada Pension Plans, provisions that would clearly not encourage later retirement.[1]

However, before one can discuss the merits of later or earlier retirement, a definition of what is meant by "retirement" is needed. A practical problem is that there is no generally accepted definition. The notion itself is perhaps inevitably fuzzy at a conceptual level, but

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[**]Denton and Spencer (2009b) assess some of the potential effects.

[1] We note also that legislation ending mandatory retirement has been passed in almost all provinces since the early 1980s; such legislation would at least have made it easier for those who wished to continue working after 65 to do so.

a precise definition combined with careful measurement is needed if retirement patterns are to be analysed and discussed and if comparisons are to be made over time and across countries. Denton and Spencer (2009) summarize the wide range of concepts and measures that have been proposed into three broad groups. The first is based on direct indicators of labour market activity, of which three have been suggested: non-participation in the labour force, a reduction in hours worked and/or income earned, and a reduction below an arbitrarily low threshold in hours worked or/or income earned. The second set of measures is based on indirect indicators of labour market activity; they include receipt of retirement income, left main employer, change of career or employment later in life, and self-assessed retirement. The third and final set consists of various combinations of the preceding seven measures. Of the many that have been suggested, no one measure dominates. Also, several of the ones that have been proposed depend on information that is not routinely available from on-going surveys; that makes it difficult or even impossible to make comparisons of how retirement patterns have changed over time or across jurisdictions.

The purpose of the present paper is to propose precise definitions of retirement in terms of the reported age-income profiles of individuals drawn from successive cohorts and to provide corresponding measures of the ages at which Canadians have been retiring in the last two and one-half decades. In doing so we draw on a longitudinal income data base, the *LAD* file (the *Longitudinal Administrative Databank*), a very large sample of Canadian tax-return files going back to 1982. Measures of the sort that we propose here could be developed in other jurisdictions with comparable data.

We proceed as follows. In the next section we set the stage with an overview of

historical changes in labour force participation rates (and the implied retirement rates), drawing on the Statistics Canada *Labour Force Survey* (*LFS*). This provides a reference point for comparisons of the income-based retirement definitions that follow. In subsequent sections we provide a description of the *LAD*, propose a number of income-based measures of retirement, present the empirical results of our analysis, and interpret how those measures have changed over time and across cohorts.

2. Participation Rates of Older Workers: An Historical Perspective based on the LFS

Cross-sectional age profiles of labour force participation rates are displayed for older workers in Figure 1 and in Tables 1 and 2, for the years 1976, 1986, 1996, and 2006, separately for males and females. Since we have been able to draw on the master files from the *LFS*, the rates shown go beyond what has been available previously: they relate to single years of age rather than five-year groups, and extend into more advanced ages – beyond age 80 for males, into the late 70s for females. (Thus they avoid the familiar open-ended category “70 and older”.) Rates for single years of age are subject to greater sampling error, and that gives rise to occasional implausible differences from one year of age to the next. However, since our focus is on the age-patterns of retirement and retirement rates can change rapidly from one year of age to the next (e.g., people are more likely to retire at 65 than at 64), it is important to work with data for single years of age.

For both males and females we see that participation rates decline with age, as expected. The extent of decline is evident also from what we term the Labour Force Activity Index (LFAI) reported in Tables 1 and 2, which shows the participation rate at each older

age relative to the rate at age 52.[1] Substantial changes in the age patterns over time are evident. For males, participation at all ages was generally highest in 1976, markedly lower by 1986, and lower again by 1996, suggesting a sustained trend towards earlier retirement. However, the rates had rebounded somewhat by 2006: they were back to about their 1986 levels for men under 58 and to 1976 levels for those in their late 60s, suggesting *later* retirement. But even as the patterns have changed, age 65 has remained a popular age of retirement, as evidenced by the high rates of labour force withdrawal between ages 64 and 65.

Burtless and Quinn (2001) proposed that the average age of retirement of males be measured by the age at which their labour force participation rate falls below 50 percent. The variant of that measure that is used here limits comparisons to those who had been in the work force, as indicated by participation rates for those in their early 50s, and then determines the age at which that rate had declined by half. Using that definition, and keeping age 52 as the base, we can calculate from Tables 1 and 2 that the median retirement age for males was 64.5 in 1976, 63.6 in 1986, 62.1 in 1996, and 63.7 in 2006. For females the age changed from 62.7 to 61.2 to 59.8 to 61.3 over the same period.

We refer to the rates plotted in Figure 1 as *period* rates – i.e., they are based on surveys for particular calendar years. However, the survivors of those who were age 50 in 1976 were 60 in 1986, 70 in 1996 and 80 in 2006, and the participation experience of that *cohort* as it aged need not resemble the *period* rates in any one year. Thus, we can combine the rates from successive periods to infer how participation evolved for each

[1] Age 52 (rather than 50) is chosen to facilitate comparisons in the analysis that follows. However cohorts are identified by the year in which they were age 50.

cohort as it aged. In Figure 2 we use activity indexes to compare the participation profiles for cohorts[2] that were aged 50 in each of 1976, 1986, and 1996 with the period rates of those years.

For the 1976 cohort (the cohort aged 50 in 1976) we have 31 observations (1976 to 2006 inclusive), and hence can derive a cohort profile from age 50 to age 80. The upper panel of Figure 2 shows indexes of the participation rates, separately for males and females, from age 52 to age 72. (After age 72 the rates are low and continue to fall.) Similar comparisons are made in the lower panels for the 1986 and 1996 cohorts, although the intervals for the cohort observations are, of course, shorter.

As is evident from the figure, cohort experiences can and often do differ substantially from what we see from the period calculation for any given year . The 1976 male cohort, for example, experienced a much more gradual reduction in participation rates – and hence a much more gradual transition to retirement – than one might have expected from the 1976 period profile. In particular, while the 1976 period profile suggests a sharp reduction in participation (and hence an especially high rate of retirement) at age 65, the corresponding cohort profile tells us that there was, in fact, a rather steady reduction between the ages of 58 and 65: during that age interval approximately the same proportion of the cohort retired at each age.

Put differently, the 1976 cohort experienced lower participation rates, and hence a higher proportion retired at each age than one might have inferred based on the period

[2]Strictly speaking, the profiles relate to “pseudo-cohorts” or “synthetic cohorts” since the survey involves a representative sample of the population at each date and not the same individuals. However, for simplicity we refer to these constructions simply as “cohorts”.

profile. Thus, for example, while the period data suggest that the participation rate fell by half in two years, between the ages of 63 and 65, for the cohort that decline actually took five years, from about ages 60 to 65. We note also that the age profile is much smoother for the cohort than is apparent from the period rates. Such comparisons indicate the importance of basing inferences about retirement on cohort patterns since they reflect observed experience of people over time, rather than assuming that differences across ages in a given year can be extrapolated forward.

The 1986 male cohort profile shows rates that were generally lower between the ages of 55 and 64 than those of the 1976 cohort, but somewhat higher at older ages, at least to age 70, the end of our data period. While the 1986 cohort and period age profiles are generally more similar to one another than are the corresponding ones of a decade earlier, the fact that the cohort profile lies below the period one for those in their 50s indicates that participation rates were continuing to fall. By 1996 they were rising, however, so the cohort rates were higher than the period rates.

In sum, this analysis of Labour Force Survey data indicates that the sharp reduction in the typical age of male retirement that is suggested by comparisons of cross-sectional or period age profiles of participation rates over the last three decades, as shown in Figure 1, overstates the much more gradual reductions that actually occurred from one cohort to the next.

For women the comparisons are quite different but the importance of focussing attention on cohort patterns of retirement remains. Participation at age 50 increased from about 50 to 60 to 70 percent for the three cohorts shown in Figure 2, and the rates for those cohorts while in their 50s were consistently above those indicated by the period profiles.

That is the result of the on-going and fairly steady rise in female participation rates that has occurred at all ages. However, as we shall see, higher participation is not necessarily linked to later retirement.

Measures of retirement based on Labour Force Survey concepts have been used in recent studies, including Baker and Benjamin (1999), Habtu (2002), and Shannon and Grierson (2004) for Canada, Tanner (1998) and Arkani and Gough (2007) for the UK, and Blondal and Scarpetta (1998) for 15 OECD countries. A feature of using non-participation as an indicator of retirement is its "all or nothing" character: an individual who left a career job last year and thinks of her/himself as retired would not be counted that way this year if s/he is still working at all, even if for only a few hours a week. More refined measures would be needed to understand different kinds of transitions or to assess what for some might be lengthy transitions from work to retirement, with either gradual or sudden reductions in labour force attachment.

For such measures it would be necessary to observe the evolution of labour force attachment *for the same individuals* over time, something that cannot be done using a cross-sectional or period survey. In what follows we describe a data base that makes it possible to assess changes in individual labour market activity over many years. We then develop alternative measures of retirement that differ in terms of the extent of reduction in earned income that is used to indicate that a transition to retirement has occurred.

3. Brief Description of the LAD [3]

The *LAD* is a random 20 percent sample of all taxpayers who file Canadian income tax returns in any year, starting in 1982. Information is added as new returns are filed, and the sample is augmented each year with 20 percent of first-time tax filers. Individuals are included for all years in which they filed tax returns. By 2006 there were more than 4.9 million individuals in the sample. Our concern here is only with information at the individual level, but other levels are available[4].

The *LAD* contains mostly information reported on the income tax returns of individuals[5]. That means that there is a detailed year-by-year record for each individual of how much income of each type was received. From the returns we know also age, sex, marital status, and place of residence – but little else[6]. For some purposes there is clearly more that one would like to know about the characteristics of those approaching retirement – such as level of education, industry of previous employment, occupation, etc. Even so, the *LAD* has much to recommend it. Indeed, the very large sample size, its longitudinal nature, and the detailed and accurate information about income that it provides make it a very appealing foundation for the analysis of income-based measures of retirement and

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[3] The following description is drawn largely from Statistics Canada's *Longitudinal Administrative Data Dictionary* (catalogue no. 12-585-XIE).

[4] There are three such levels: spouse/parent, family, and child(ren).

[5] Some information is drawn from other administrative files, but nothing of relevance for the work reported here.

[6] There is an important exception. For immigrants who arrived in Canada in 1982 or later, the records include further information about their characteristics and intended destinations at the time of arrival.

how patterns of retirement have changed over time for successive cohorts. We note that the *LAD* has been used to investigate a wide range of topics, including the distribution of earnings, poverty dynamics, and interprovincial mobility, among others. However, it has been used in only two studies concerned with retirement as such, one by Tompa (1999) and one by Wannell (2007); in both cases retirement was defined by the receipt of pension benefits.

4. Income-Based Definitions of Retirement

We take *retirement* to be irrelevant before the age of 50 and focus on those who were actively employed while in their early 50s, as indicated by the receipt of a sufficiently high level of income from employment while aged 50-52. Retirement is then defined by a major and sustained reduction in employment income from that level.

More specifically, we first select all tax filers aged 50 in 1982, and follow them until 2006 if they survived and continued to file income tax returns, or until they died or were otherwise lost from the sample because they failed to file tax returns[7]. We then do the same for tax filers aged 50 in 1983, tax filers aged 50 in 1984, etc., thus building up income histories for a series of successive cohorts. We exclude those few who died or were lost before reaching age 52. We exclude also those with any income from farming or fishing at ages 50, 51, or 52, since the notion of retirement is conspicuously vague for those occupations.

[7] For this analysis income information is imputed for those relatively few tax filers who failed to file for either a single year or two years in a row, but then filed again. The imputation is based on a simple averaging of information available in one year preceding and one year following the missing value(s).

For each tax filer remaining in our sample, average annual income from employment at ages 50 to 52 is then calculated as the arithmetic mean of income at those three ages. (Employment income is adjusted for inflation using the consumer price index and expressed in 2006 dollars. It includes net income from self-employment.) Since the selection is intended to identify those with significant labour market attachment, we also exclude from our analysis those for whom this average is less than $10,000. That figure is arbitrary, but it represents what one might think of as the amount that would be earned by someone working on a part-time basis at a low wage.

For each tax filer the ratio of employment income at each subsequent age to average employment income at ages 50-52, denoted by *R*, is then calculated for each year for the maximum period permitted by the data.[8] A tax filer is said to have retired at the age at which *R* first falls below a critical level *R**, provided that the condition continues to be satisfied (i.e., the person is still retired) in the subsequent two years[9]. Several values of *R** are considered, ranging from 0.00 to 0.50. Thus, at one extreme, a person is deemed to

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[8] In symbols, let $\overline{E}_{i,52,t+2}$ be average employment income at ages 50-52 for individual *i* who was age 50 in year *t* (and hence 52 in year *t+2*); $\overline{E}_{i,52,t+2} = \frac{1}{3}\sum_{j=0}^{j=2} E_{i,50+j,t+j}$. Let $R_{i,52+j,t+j+2}$ be the ratio of employment income at each subsequent age relative to the average at ages 50-52;

$R_{i,52+j,t+j+2} = E_{i,50+j,t+j} \Big/ \overline{E}_{i,52,t+2}$, *j = 3, 4, ...*

[9] A tax filer would be deemed to be retired at the youngest age x at which the specified condition is satisfied. By way of example, a person would be deemed to have retired at 63 if the retirement condition is satisfied at *each* of ages 63, 64, and 65. In addition, a person would be deemed to have retired at age 63 if the condition is satisfied at age 63 and the person is dead or lost from the sample at age 64 or it is satisfied at ages 63 and 64 and the person is dead or lost at age 65.

have retired only if s/he has no income from employment (R^* = 0.00); at the other, that same person could be classified as retired even if income from employment is half as great as its average level when that person was aged 50-52 (R^*<0.50)[10]. The full set of alternative values considered is:

$$R^* = 0.50, 0.25, 0.10, \text{ or } 0.00.$$

We note and emphasise that what we measure here, strictly speaking, is *first* retirement. Individuals may, of course, retire by our criteria and subsequently return to work. However, the criteria are rather demanding, inasmuch as earned income must remain below the threshold ratio for three successive years. Analyses of multiple retirements, of bridging practices between "full employment" and "full retirement", and other dynamic aspects of retirement behaviour could be considered in further work. We note also that we are unable to distinguish whether retirement as we measure it is voluntary or involuntary.

5. Retirement Patterns: The 1982 Cohort

We have developed an accounting framework to keep track of all possible flows for each cohort of tax filers. Table 3 illustrates the framework for the cohort of male tax filers aged 50 in 1982 (referred to hereafter as the 1982c male cohort). As noted above, attention is focussed on filers who survived to age 52 and filed income tax returns at ages 50, 51 and 52. That group is essentially the entire taxfiler population. By construction, the first

[10] We note that unusually high periods of unemployment at ages 50-52 would reduce the employment earnings of some taxfilers below "permanent" levels. In such cases our criteria would overstate the reduction in earnings that would be required in order to be classified as retired.

retirement could be observed at age 53, and hence all filers – 100.0 percent – were classified as *not retired* (NotR) at age 52. By age 53 they could have died before retiring (DBR), have been lost from the data base of tax filers before retiring (LBR), or have retired. At subsequent ages those already retired could be still alive (and hence still retired), have died after retirement (DAR), or been lost from the sample after retirement (LAR).

We are able to follow the 1982c male cohort for a total of 24 years and, given our approach, to assess the retirement or other state of each tax filer from age 53 to age 72. The table shows that if the earnings replacement criterion is set at 0.10, 26.1 percent of the male cohort would be classified as *not retired* by age 65 and 58.2 percent as *retired*. However, by that age 9.9 percent had either died (5.9 percent) or been lost (4.0 percent) before retirement. Those remaining either died or were lost after retirement. The plot at the bottom of the table shows, as expected, that the proportion retired increases with age, at least until the gains through new retirements are more than offset by losses through deaths or unexplained failures to file tax returns.

Table 4 relates to the 1982c female cohort. The age pattern is similar to that for males, perhaps surprisingly so. However, what that means is that women with a fairly strong labour force attachment in middle age retire at about the same rate as men. While the proportion of women dying at each age, both before and after retirement, is lower than for men, as expected, the proportion lost from the file is somewhat greater.

We base a number of further retirement calculations on this framework; they are reported in Tables 5 and 6 for the 1982c male and female cohorts, for each of the four income-replacement ratios that we use to determine whether a person had retired.

The upper panel in each table shows the percent *ever retired* at each age, from 52

to 72. That is, it presents the age-earnings profile of those who satisfied the criterion of having retired, including those who subsequently died or were lost from the sample. (Thus the denominator includes also those who died or were lost from the sample *before* retirement; hence the maximum percent ever retired is less than 100.) Based on the 10 percent income replacement criterion ($R^* = 0.10$), 74.0 percent of the male cohort and 77.6 percent of the female cohort had retired by age 66. However, the proportion varies with the leniency of the criterion: if a person can continue to earn up to half of pre-retirement employment income and still be deemed retired ($R^* = 0.50$) then 85 (instead of 74) percent of males would be 'retired', while if no earnings are permitted ($R^* = 0.00$) only 69 percent would be – a difference of 16 percentage points. For females the difference is 12 percentage points – from 87 to 75.

The middle panel shows *retirement rates* – the proportions of the 1982c cohort retiring at each age, conditional on still being alive and not being retired already or lost from the sample. (Such rates would often be referred to as *hazard rates*.) The rates of retirement are higher the greater the amount of replacement earnings permitted. However, the pattern is similar for all replacement ratios: whichever criterion is used, the rates of retirement increase steadily but fairly slowly for both men and women when they are in their 50s, are higher but stable for those in their early 60s, have a sharp peak at age 66, and then decline to lower but stable levels at older ages[11].

[11] The peak at age 66 (rather than 65) reflects the annual nature of the data. Consider someone whose employment income stopped on the day that s/he reached age 65; that would occur, on average, half way through the year after earning half a year of income. In consequence the person's employment income would not decline sufficiently to be declared 'retired' until the following year, when s/he was age 66.

Finally, the bottom panel shows the proportion of the cohort remaining in the sample that is *still alive and classified as retired*. By the most restrictive definition (no income from employment) 76 percent of the male cohort and 82 percent of the female cohort had retired by age 66; by the least restrictive definition (employment income could be up to half as much as it was when aged 50-52) the proportion is 91 percent for both sexes.

It is evident from Tables 5 and 6 that the choice of the *R** criterion matters: the higher the earnings ratio that is used to define a person as retired, the higher the proportion that retire at each age, and hence the higher the proportion retired. However, it is evident also from the plots that the retirement rates peak at age 66 whichever criterion is used and that the proportions retired increase with age in a generally similar fashion.

It is informative to compare the *LAD*-based measures of labour force attachment to participation rates based on the Labour Force Survey, and it would be reassuring to find that they provide generally similar information. Indeed, that is what we find. Figure 3 and Table 7 make comparisons. For the 1982c male and female cohorts they compare the *LFS* measure of participation (the same in each panel of Figure 3) to the *LAD*-based measure for each of the four values of *R**. (All values are indexed to 100.0 at age 52.) It is evident that the *LAD*-based measures yield results that are very similar to the *LFS* measure if *R** is set at either 0 or 0.10 – that is, employment earnings are either zero or at most 10 percent of their average level at ages 50-52; the activity indexes are very similar at all ages in those cases. However, the activity index based on the *LAD* is noticeably lower than the one based on *LFS* if *R** is set higher. That is as we would expect. The *LFS* would classify a person as “not in the labour force” in a survey month only if that person was neither employed nor unemployed, a situation that would typically be reflected in no earnings.

6. How Cohort Patterns of Retirement Have Changed

What about later cohorts: have the age patterns of retirement changed? A first indication is provided in Tables 8 and 9, which show for each cohort, starting with the one aged 50 in 1982, the ages by which 25, 50, 75, and 90 percent of the cohort had retired. Within the range of comparisons that are possible with the available data, we find what appears to be surprising consistency across cohorts. If retirement is defined by having no employment income, one quarter of male cohorts were retired by age 59 or 60, of female cohorts by age 58 or 59. That is true for all cohorts. If the definition permits up to half of earnings to be replaced the age is somewhat lower, 56 or 57 for both men and women, but stable across cohorts. Such consistency across cohorts again indicates that the age patterns of retirement are generally more stable when considered from a cohort perspective than would have been expected from looking only at period labour force participation rates.

Further comparisons with the Labour Force Survey (pseudo-) cohorts are possible. The last rows in Tables 8 and 9 show, for each cohort, the age at which the participation rate had fallen to half of what it was at age 52 – a variant of a proposed measure of the median age of retirement as discussed above. Using this measure the age for both males and females is about one year younger, on average, than when the *LAD*-based criterion $R^* = 0.00$ is used; while the *LFS*-based measure shows somewhat greater variability, the time path is generally similar to the one based on the LAD^{12}, and less than would have been anticipated based on period rather than cohort measures.

General consistency across cohorts is also suggested by Figure 4, which shows

[12] A one-year age difference reflects, in part, the ways in which the two measures are derived; see footnote 10.

age-specific retirement rates for four cohorts of males and females for R^* = 0.10. Specifically, it shows the proportion that retired at each age *conditional on not having retired already.* From this figure, the appendix tables A3 and A4 on which it is based, and Tables 8 and 9, it is evident that for all cohorts there is a sharp retirement peak at age 66; that is far and away the most likely age at which the first full year of retirement is experienced. Evident also, the patterns for males and females are very similar. Women are somewhat more likely than men to retire at any given age, but the differences are small.

However, behind the apparent stability in the cohort profiles have been some notable changes in the age patterns. The proportion retiring at age 66 has been declining steadily – from 38.9 percent for the 1982c male cohort, which reached age 66 in 1998, to 32.0 percent for the 1987c cohort, which reached that age in 2003; for women the decline was from 42.2 to 34.6 percent. Also, for the 1987c and 1992c cohorts there is a secondary retirement peak at age 61 and, for the 1992c and possibly 1997c cohorts, a third (much lower) peak at age 56.

Figure 5 provides another view of the shift in the age structure of retirement that has occurred; males are shown in the upper panel, females in the lower one. For each of the 1982c, 1984c, 1986c, and 1988c cohorts the plots show the cumulative percent retired by the age specified on the horizontal axis. From Table 8 we know that the median age of retirement for all male cohorts was a little older than 62 if R^* = 0.10. Here we see that the lines for these four cohorts are very close at 62, and that they cross by age 63, when about 55 percent of each of the cohorts shown had retired.

Even though the median age of retirement changed very little from one cohort to the next, it is evident from the figure that there were substantial changes in the distribution at

other ages. For example, at ages younger than 63 the 1982c plot lies furthest to the right: that means that over the age range 53-63 this cohort had the *lowest* proportion retired at each age. For several of the cohorts that followed, the plot of retirement proportions shifted to the left. Of those shown in the figure, the 1988c cohort lies furthest in that direction, indicating that it had the *highest* proportion retired at each age younger than 63. In consequence of that shift one quarter of the 1988c cohort had retired by age 58.2, or 1.3 years younger than the 1982c cohort. It is not shown in the figure, but for still later male cohorts (the 1989c, 1990c, ... cohorts) the retirement plots shifted in the opposite direction, to the right at younger ages, indicating later retirement.

A broadly similar shift in the age structure of retirement occurred for females also, as shown in the lower panel. However, the female cohort cumulative distributions cross well above the median – at about the 70th percentile, at age 64. But, like males, at ages younger than 64 the 1982c plot lies furthest to the right and, of those shown, the 1988c cohort lies furthest to the left.

Such differences are noteworthy and important: one additional year of labour force participation on the part of a cohort contributes importantly to the productive potential of the economy, one fewer year reduces that potential.

Whether the shift in the age structure of retirement during this period was related to high rates of unemployment is a matter that we leave for future research using a modelling approach. However, we note that the unemployment rate was above 10 percent from 1991 through 1994, and fell below 9 percent only after 1997. The fact that retirement rates increased when unemployment was high and declined as unemployment declined suggests that at least some of the retirements might have been “involuntary” or otherwise influenced

by current economic conditions.

The preceding discussion relates to all taxfilers included in the analysis. The retirement rates for those classified as ‘employees’ (thereby excluding anyone who reported income from self-employment in any year) are shown in Tables A17 through A32; the age patterns are similar to those already described, but the proportions retired at each age are uniformly somewhat higher, as expected: the self-employed, who are included in other tables, retire later on average, and thus reduce the combined rates at each age.

7. Concluding Remarks

Although *retirement* is the topic of much discussion and considerable policy interest, the concept itself is generally not well defined, and many different measures have been suggested, based on a variety of criteria. There is fairly general agreement that one can “retire” only after a lengthy period of “work”, and hence the concept applies only to older workers. But, because definitions vary and the data requirements for accurate measurement are often demanding, it is difficult in practice to assess at any given time who is retired and who is not, and more difficult still to make comparisons over time and across jurisdictions.

In a general sense, retirement is usually taken to mean a substantial and sustained reduction in the amount of time that one spends working for pay or profit. However, measurement requires not only a definition of what is meant by *substantial* but also observations of the same individuals over a sufficiently long period of time to determine whether a transition from “working” to “retired” status has in fact occurred. Few data sets have that potential.

An important exception is the Statistics Canada *Longitudinal Administrative Databank*. The *LAD* is based on a 20 percent sample of all tax filers, and it includes information that is reported on individual income tax returns for every year since 1982. Using the *LAD* we identify those with significant labour force attachment, based on their level of employment (including self-employment) income at ages 50-52, and follow them year by year for as many years as the data permit. Retirement is deemed to occur when there is a reduction in employment income from that observed at ages 50-52 that is both substantial and sustained. The reduction must be at least 50 percent (based on the most liberal criterion, or 75, 90, or 100 percent, based on others), and must be sustained for three years. Using the framework that we have developed, we are able to analyse the retirement patterns year by year for successive cohorts, each defined by the year in which they were age 50, and to make comparisons of patterns over time.

Our main findings are as follows. If retired means having no income from employment, the median age of retirement is about 63 for men, 62 for women. That is true for all cohorts. Alternatively, if continuing to earn up to half of one's previous employment income is deemed consistent with being retired, the median age is somewhat lower, at about 60 for both men and women. That the median age of retirement for successive cohorts of men and women should have changed so little over time is itself a surprise, since male period or cross-sectional participation rates first declined and then increased over the data period, while female rates increased fairly steadily.

The similarity in the median age of retirement for men and women probably results from our focus on only those who had significant labour force attachment when they were in their early 50s. We find also that the age-specific probabilities of retirement are similar

for men and women, perhaps surprisingly so; while women are somewhat more likely to retire at each age, the differences are small. There is a sharp peak in the retirement rate at age 66 (viewed as the first complete year of full retirement), but the proportion retiring at that age has been declining steadily. We find that for the first cohort considered – the one aged 50 in 1982 – the only peak in the age pattern of retirement occurred at age 66. In later cohorts a second retirement peak evolved, at age 61, and in still later cohorts a third (much lower) one, at age 56.

Finally, in spite of the rather modest changes in the median age of retirement, we find some notable shifts in the overall age patterns. For example, early retirement increased until the late 1990s, as indicated by the rise in the proportions of successive cohorts that were already retired at each age before reaching their mid-60s. Since that time the proportions retiring early have decreased.

While true cohort measures of retirement, let alone dynamic measures based on reductions in earnings over time, cannot be based on the *Labour Force Survey* because of its cross-sectional or period nature, we have been able to make use of successive years of the *LFS* data to construct pseudo-cohort profiles of rates of labour force participation and compare them to cohort profiles based on the *LAD* that reflect the age-pattern of employment income. There is fairly close correspondence when the *LAD*-based criterion is zero earnings, and that is reassuring. However, a much more refined picture of how retirement patterns have evolved across cohorts and how sensitive those patterns are to alternative income-based definitions of retirement emerges with the *LAD* and the lengthy record of earnings from employment that it makes available at the individual level.

There are many directions to pursue in future work with the *LAD*; we mention two.

One would be to assess the extent to which men and women reduce gradually their labour force attachment as they age, thereby phasing in their retirement. A second would be to develop econometric models of the retirement process in order to gain a better understanding of the factors that cause people to retire when they do.

Definitions

Activity index – age sequence of LFS or LAD rates or proportions expressed in index form, with age 52 = 100.0

Earnings includes earnings of employees and (unless otherwise noted) self-employment earnings, expressed in constant dollars, with the Consumer Price Index used as deflator, rebased to 2006 = 100.0

LAD Longitudinal Administrative Databank, constructed from a 20 percent sample of all individuals who filed personal income tax returns in any tax year, beginning with 1982.

LFS Labour Force Survey; we work here with annual averages of monthly sample estimates based on the LFS

R ratio of taxfiler's annual reported earnings to his/her base earnings (i.e., average earnings at ages 50-52)

Taxfilers all individuals in the LAD sample who reported average annual earnings of at least 10,000 constant dollars at ages 50, 51, and 52, excluding individuals who reported any earnings from farming or fishing

1982c, 1983c, etc., indicates the year in which a cohort was aged 50

Labour force participation rate – labour force as percentage of population, as defined in the Labour Force Survey; the LFS population excludes residents of the Yukon, Northwest Territories, and Nunavut, persons living on Indian Reserves, full-time members of the armed forces, and inmates of institutions

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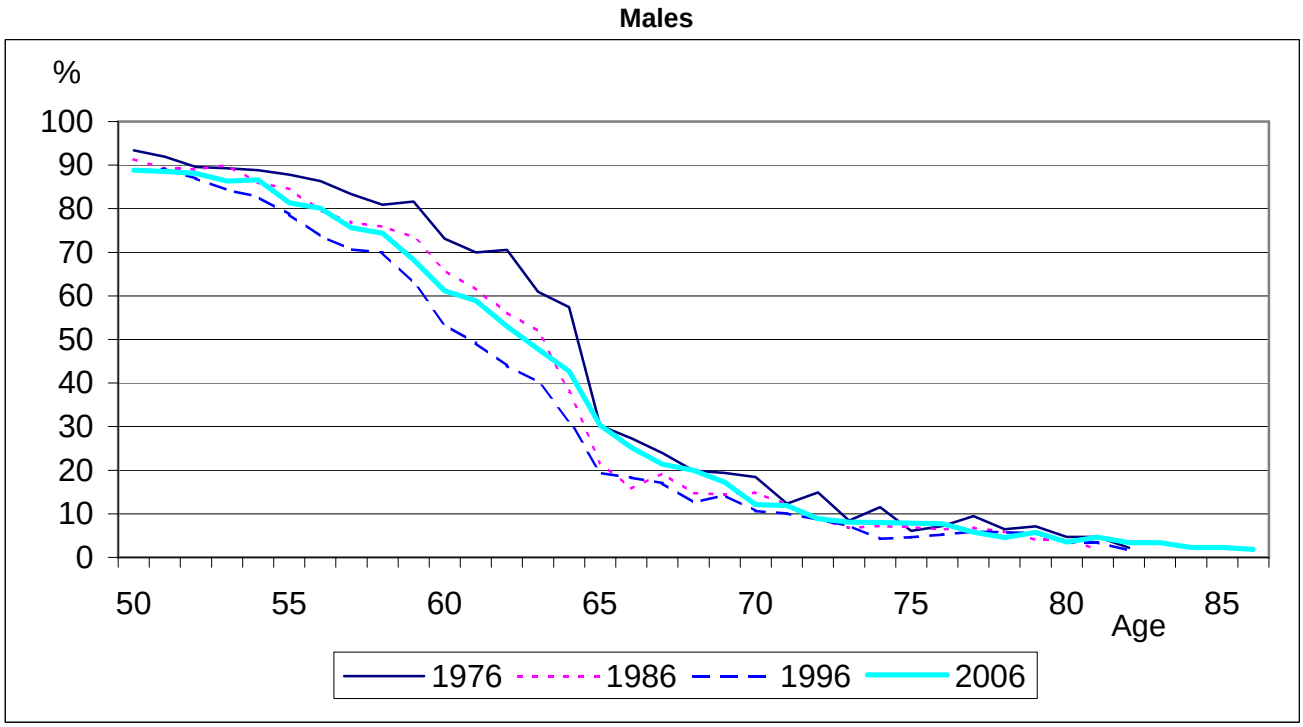
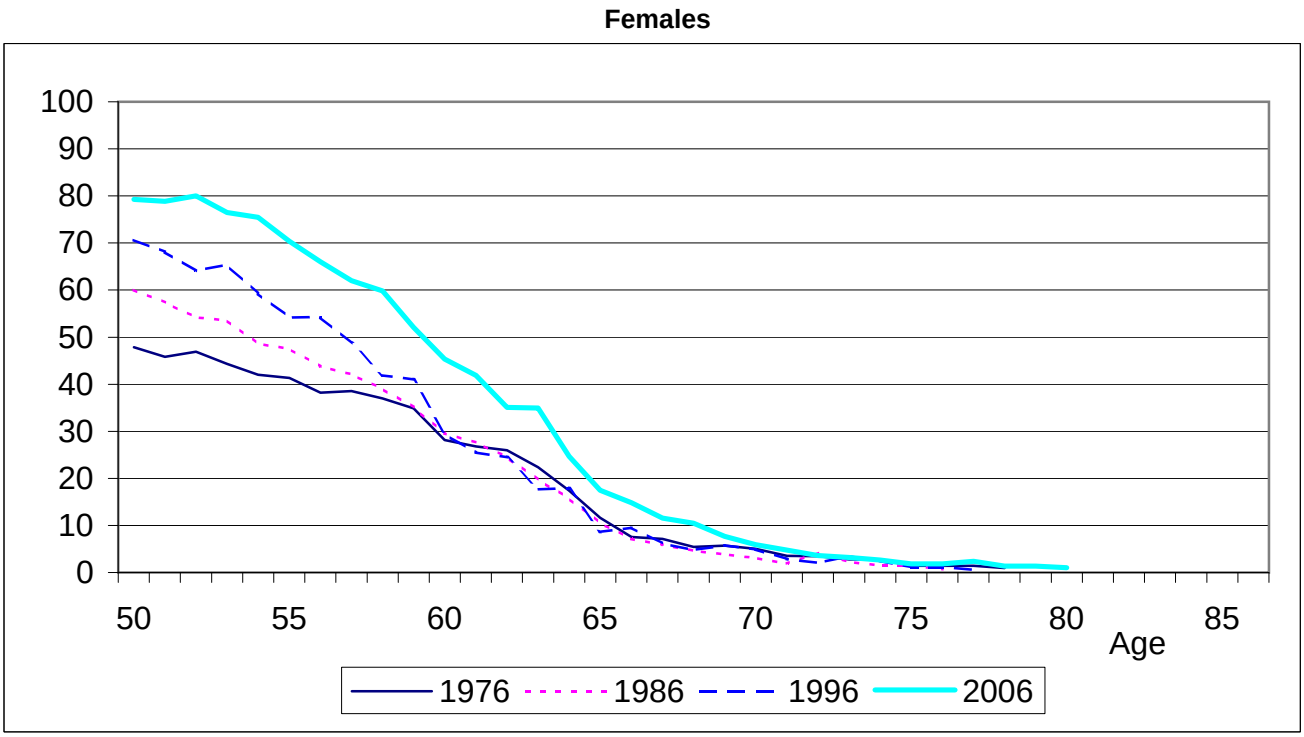
Figure 1: LFS Period Participation Rates, Selected Years





Note: Plots based on tabulations of the monthly Labour Force Survey master files, 1976-2006, in the Statistics Canada Research Data Centre at McMaster University. The rates are shown for single years of age (except for a few cases where small sample sizes meant that two years of age had to be combined), and are the weighted average rates over a twelve-month period.

Figure 2: LFS Period and Cohort Labour Force Activity Indexes (Age 52 = 100), Selected Years and Cohorts

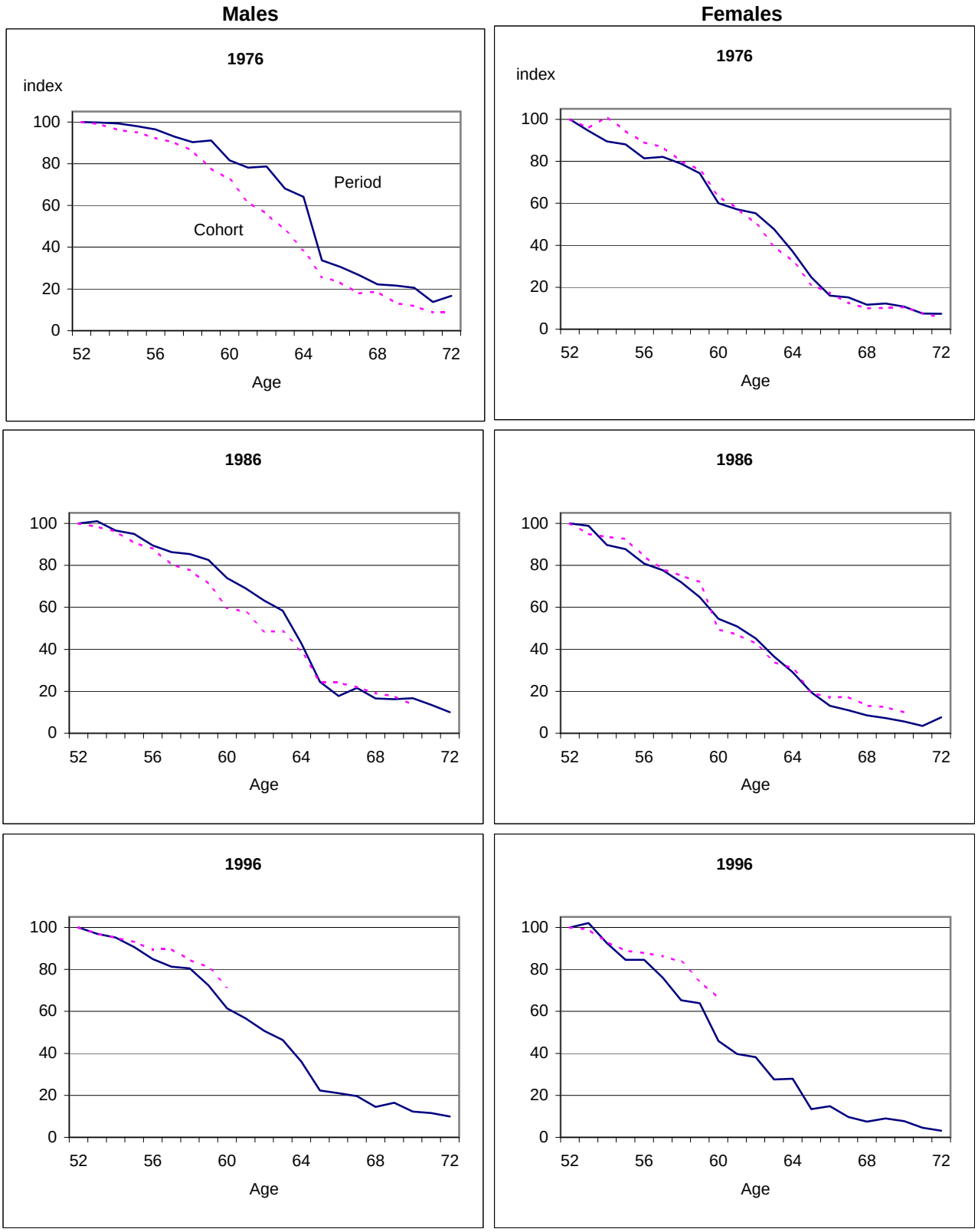


Figure 3: Comparison of LFS and LAD Labour Force Activity Indexes (Age 52 = 100), 1982c Cohorts (Alternative R* Values)

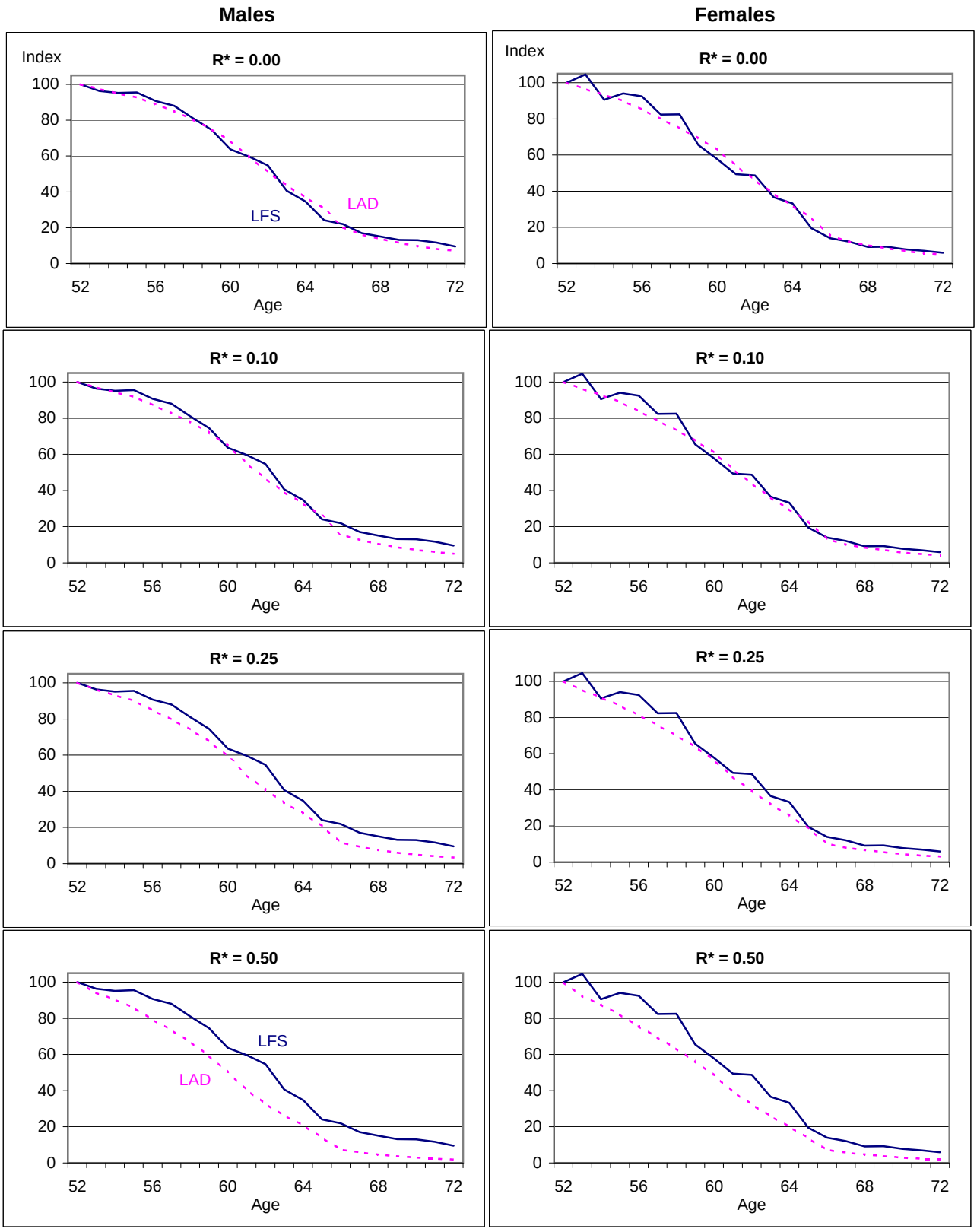
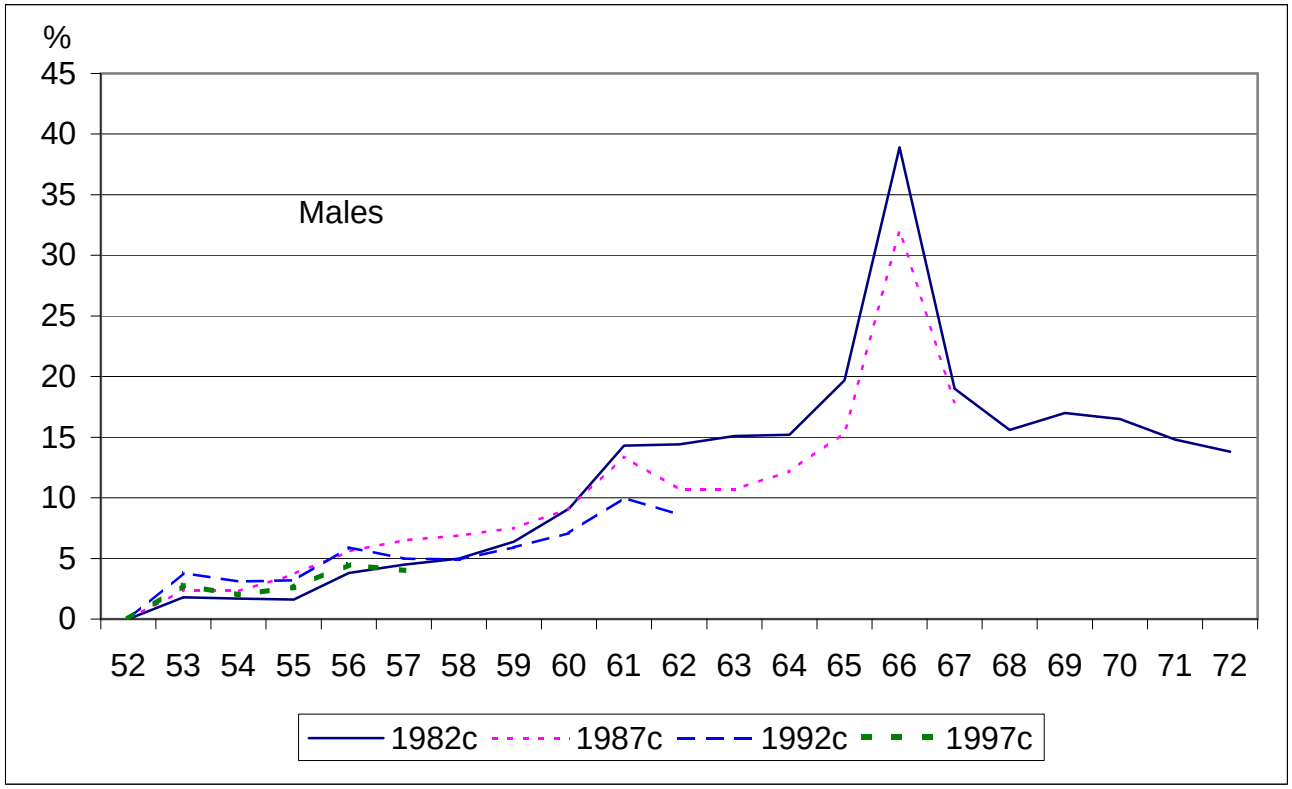


Figure 4: Retirement Rates Based on LAD Taxfiler Data, Selected Cohorts (R* = .10)



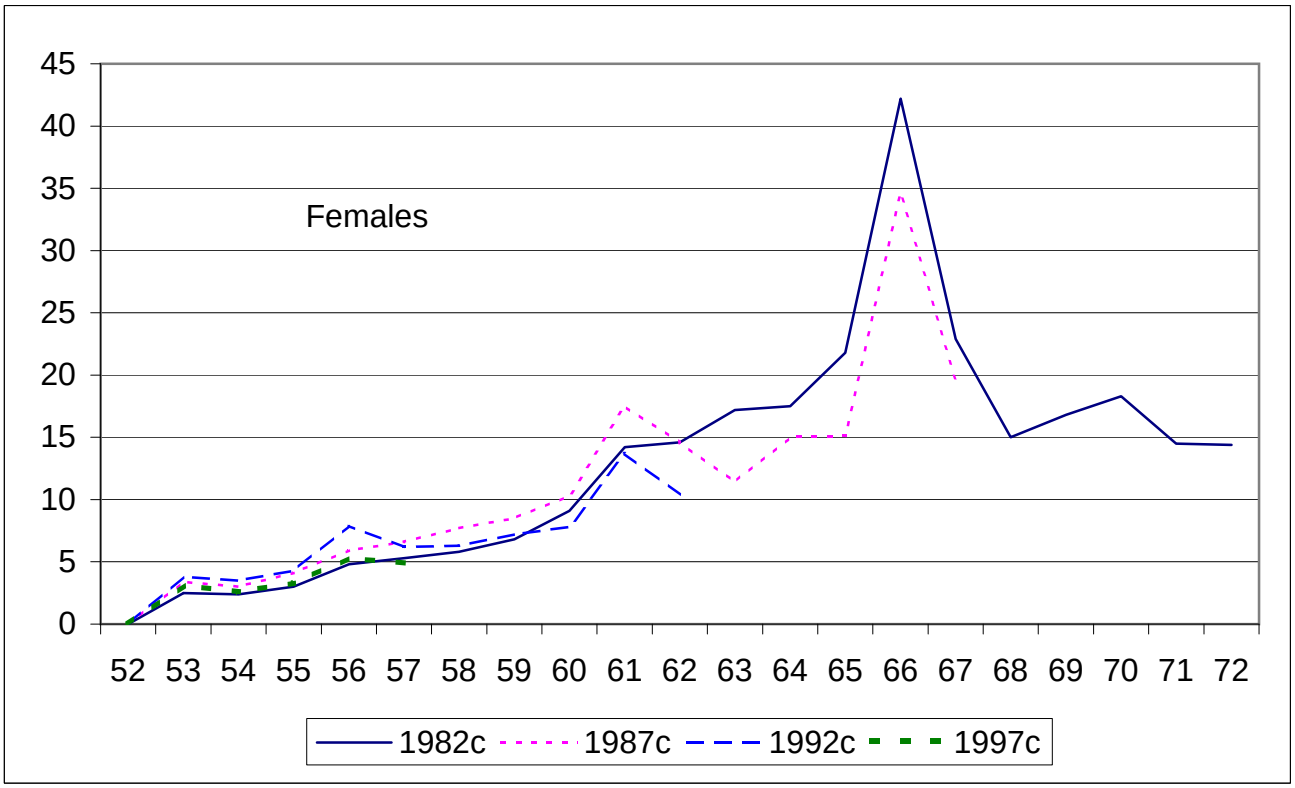


Figure 5: Percentage Still Living and Retired, with R* = .10, by Age and Selected Cohort

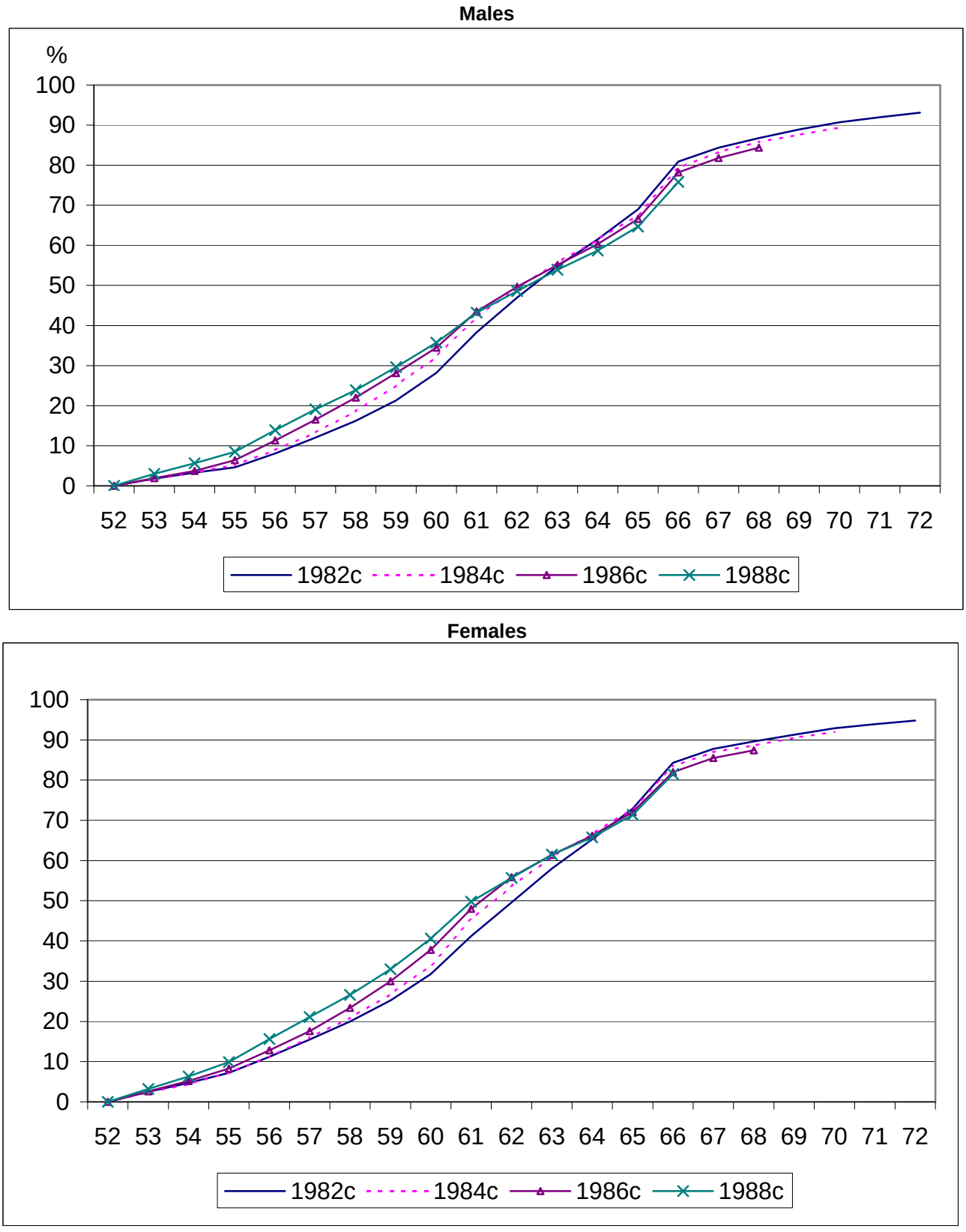


Table 1: LFS Period Participation Rates and Activity Indexes, Selected Years: Males

Age	1976		1986		1996		2006	
	LFPR (%)	LFAI (index)	LFPR (%)	LFAI (index)	LFPR (%)	LFAI (index)	LFPR (%)	LFAI (index)
52	89.6	100.0	89.0	100.0	86.9	100.0	88.1	100.0
53	89.3	99.7	90.0	101.1	84.3	97.0	86.3	98.0
54	88.9	99.2	86.0	96.6	82.7	95.2	86.7	98.4
55	87.8	98.0	84.5	95.0	78.7	90.6	81.4	92.4
56	86.3	96.4	79.7	89.5	73.7	84.9	80.1	91.0
57	83.3	93.0	76.8	86.3	70.6	81.3	75.6	85.9
58	80.9	90.3	76.0	85.3	69.9	80.5	74.4	84.4
59	81.6	91.1	73.5	82.6	63.0	72.5	68.3	77.6
60	73.1	81.6	65.8	73.9	53.4	61.4	61.2	69.5
61	69.9	78.1	61.4	69.0	49.2	56.6	58.9	66.8
62	70.5	78.7	56.3	63.2	44.0	50.6	53.0	60.2
63	61.0	68.1	52.0	58.4	40.3	46.3	47.8	54.3
64	57.4	64.1	38.2	42.9	31.4	36.1	42.8	48.6
65	30.2	33.8	21.8	24.5	19.4	22.3	30.3	34.5
66	27.3	30.5	15.8	17.8	18.3	21.1	25.2	28.6
67	23.9	26.7	19.3	21.7	17.0	19.6	21.3	24.2
68	19.9	22.2	14.7	16.6	12.6	14.5	20.0	22.7
69	19.4	21.6	14.4	16.2	14.3	16.4	17.2	19.6
70	18.4	20.6	14.9	16.7	10.6	12.2	12.1	13.7
71	12.3	13.8	12.1	13.6	10.1	11.6	11.9	13.5
72	14.9	16.7	8.9	10.0	8.7	10.0	8.9	10.1

Table 2: LFS Period Participation Rates and Activity Indexes, Selected Years: Females

Age	1976		1986		1996		2006	
	LFPR (%)	LFAI (index)	LFPR (%)	LFAI (index)	LFPR (%)	LFAI (index)	LFPR (%)	LFAI (index)
52	46.9	100.0	54.2	100.0	64.1	100.0	80.0	100.0
53	44.3	94.5	53.5	98.8	65.4	102.1	76.5	95.6
54	42.0	89.5	48.6	89.7	59.3	92.5	75.5	94.4
55	41.3	88.1	47.5	87.7	54.2	84.5	70.4	87.9
56	38.2	81.4	43.8	80.8	54.2	84.6	66.0	82.5
57	38.5	82.1	42.1	77.7	48.8	76.1	62.0	77.5
58	37.0	78.9	39.0	72.0	41.9	65.3	59.8	74.8
59	34.9	74.3	35.1	64.9	41.0	63.9	52.0	65.0
60	28.2	60.0	29.6	54.6	29.4	45.9	45.3	56.7
61	26.8	57.1	27.6	51.0	25.5	39.7	41.9	52.3
62	25.9	55.3	24.5	45.3	24.5	38.2	35.1	43.9
63	22.3	47.6	19.8	36.6	17.7	27.6	34.9	43.7
64	17.4	37.1	15.8	29.1	17.9	27.9	24.7	30.8
65	11.6	24.8	10.5	19.5	8.6	13.5	17.4	21.8
66	7.5	16.0	7.1	13.1	9.5	14.8	14.8	18.5
67	7.1	15.2	5.9	10.9	6.2	9.7	11.6	14.5
68	5.5	11.6	4.6	8.6	4.8	7.5	10.5	13.1
69	5.7	12.2	3.9	7.2	5.8	9.0	7.7	9.6
70	5.1	10.8	3.0	5.6	4.9	7.7	5.9	7.4
71	3.5	7.5	1.9	3.5	2.9	4.5	4.7	5.9
72	3.5	7.4	4.1	7.6	2.1	3.2	3.6	4.5

Table 3: Percentage Distribution of LAD Taxfilers Among All Possible States, with R* = .10: 1982c Male Cohort

Age	NotR	DBR	LBR	Retired	DAR	LAR	Total
52	100.0	0.0	0.0	0.0	0.0	0.0	100.0
53	97.1	0.4	0.7	1.7	0.0	0.0	100.0
54	94.4	1.0	1.3	3.3	0.1	0.1	100.0
55	91.8	1.4	1.9	4.4	0.1	0.4	100.0
56	87.4	1.9	2.3	7.7	0.2	0.5	100.0
57	82.8	2.3	2.6	11.3	0.3	0.6	100.0
58	77.9	2.8	2.9	15.1	0.5	0.8	100.0
59	72.2	3.4	3.2	19.6	0.7	1.0	100.0
60	65.0	3.9	3.4	25.6	1.0	1.1	100.0
61	55.1	4.4	3.6	34.2	1.4	1.3	100.0
62	46.7	4.9	3.7	41.4	1.9	1.5	100.0
63	39.2	5.3	3.8	47.6	2.5	1.6	100.0
64	32.8	5.8	3.9	52.4	3.4	1.8	100.0
65	26.1	5.9	4.0	58.2	3.9	1.9	100.0
66	15.8	6.2	4.0	67.0	4.8	2.2	100.0
67	12.6	6.3	4.1	68.5	5.9	2.5	100.0
68	10.5	6.5	4.1	69.0	7.2	2.7	100.0
69	8.6	6.6	4.1	69.3	8.4	2.9	100.0
70	7.1	6.7	4.1	69.0	9.9	3.1	100.0
71	6.0	6.8	4.1	68.3	11.4	3.4	100.0
72	5.0	6.9	4.2	67.3	13.0	3.6	100.0

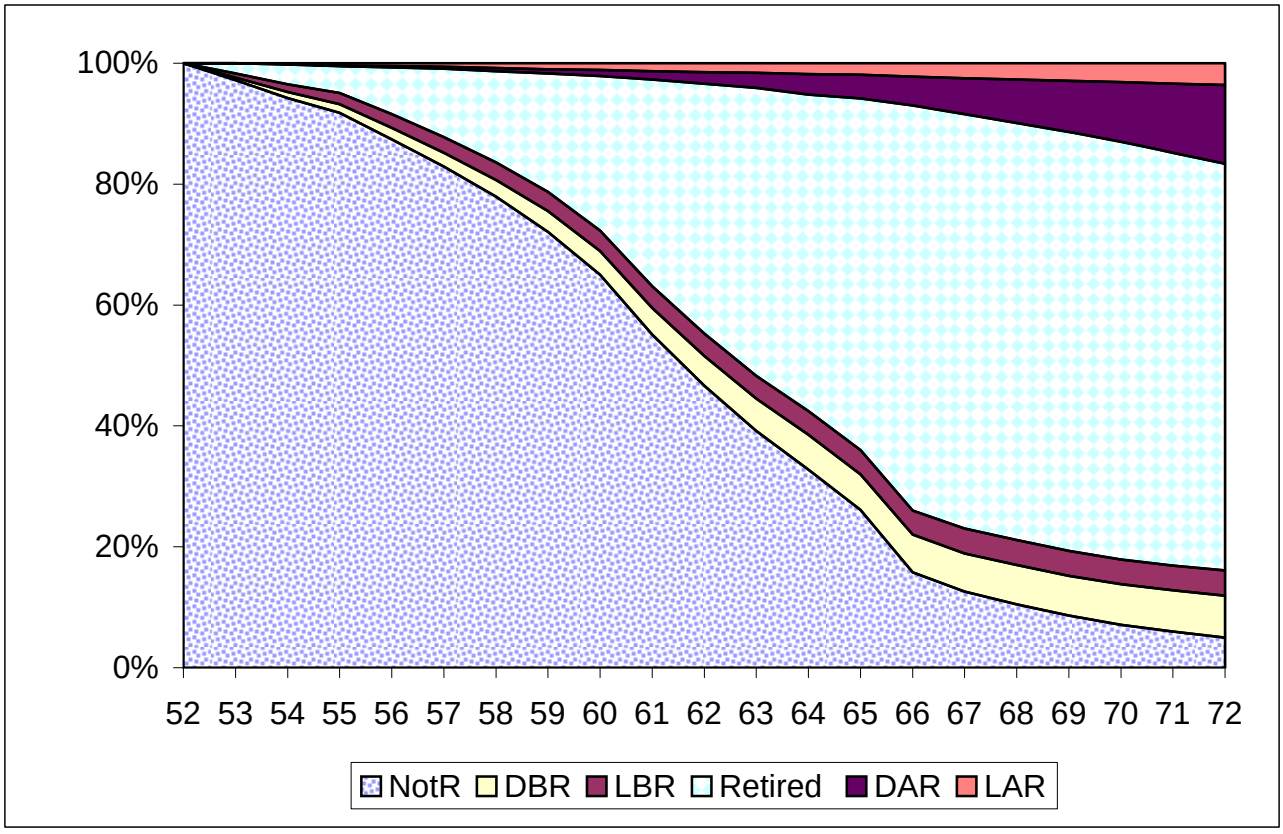


Table 4: Percentage Distribution of LAD Taxfilers Among All Possible States, with R* = .10: 1982c Female Cohort

Age	NotR	DBR	LBR	Retired	DAR	LAR	Total
52	100.0	0.0	0.0	0.0	0.0	0.0	100.0
53	96.2	0.3	1.0	2.5	0.0	0.0	100.0
54	92.9	0.5	1.9	4.6	0.0	0.2	100.0
55	89.0	0.6	2.8	6.9	0.0	0.7	100.0
56	83.9	0.8	3.5	10.6	0.1	1.1	100.0
57	78.6	1.0	4.2	14.4	0.2	1.5	100.0
58	73.3	1.3	4.9	18.4	0.3	2.0	100.0
59	67.7	1.5	5.2	22.8	0.4	2.4	100.0
60	61.0	1.8	5.6	28.4	0.5	2.7	100.0
61	51.9	2.0	5.9	36.4	0.8	3.1	100.0
62	43.9	2.1	6.2	43.2	1.0	3.5	100.0
63	36.2	2.3	6.3	50.0	1.4	3.9	100.0
64	29.6	2.5	6.4	55.7	1.8	4.0	100.0
65	23.0	2.5	6.5	61.8	2.0	4.2	100.0
66	13.2	2.7	6.5	70.7	2.5	4.4	100.0
67	10.1	2.7	6.6	72.9	3.1	4.6	100.0
68	8.5	2.8	6.6	73.5	3.8	4.8	100.0
69	7.1	2.9	6.6	74.0	4.5	5.0	100.0
70	5.7	3.0	6.6	74.3	5.3	5.2	100.0
71	4.8	3.0	6.6	73.9	6.2	5.5	100.0
72	4.0	3.0	6.6	73.5	7.1	5.7	100.0

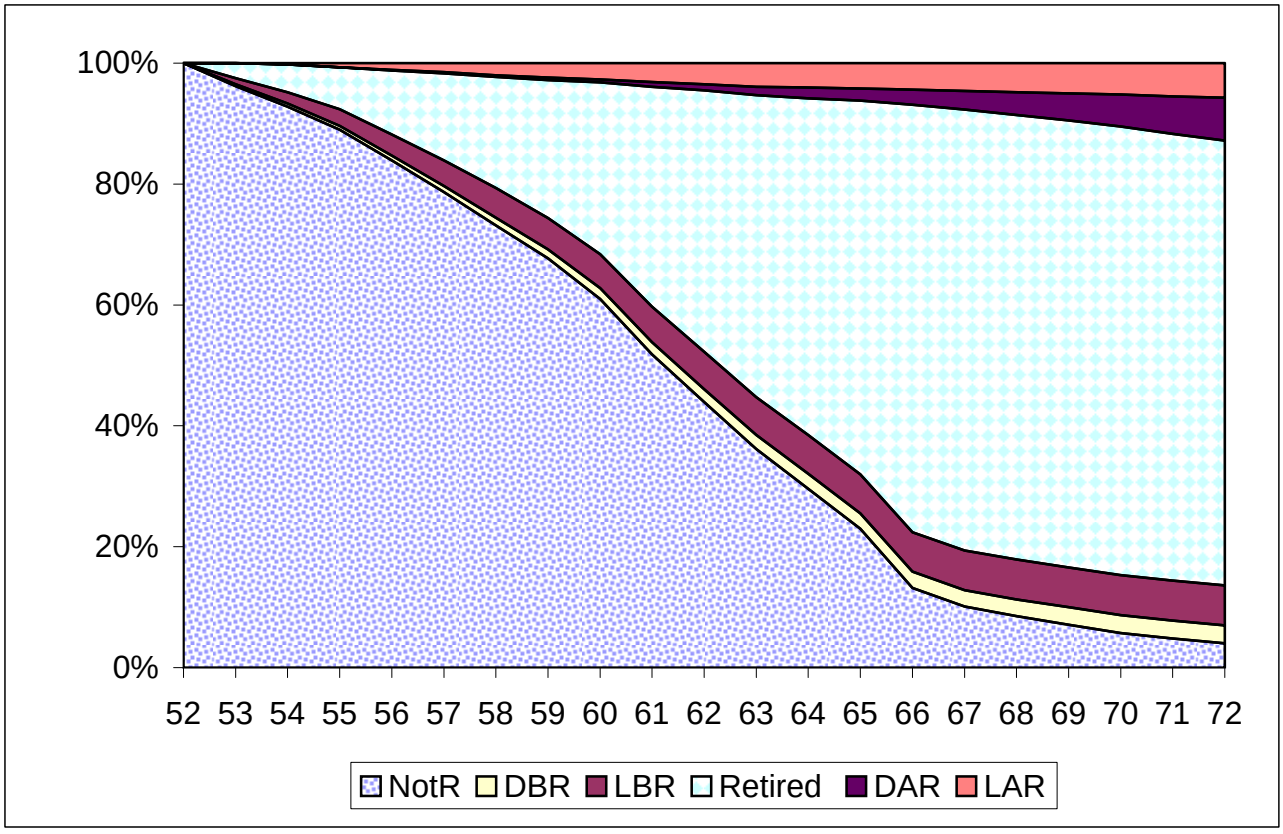
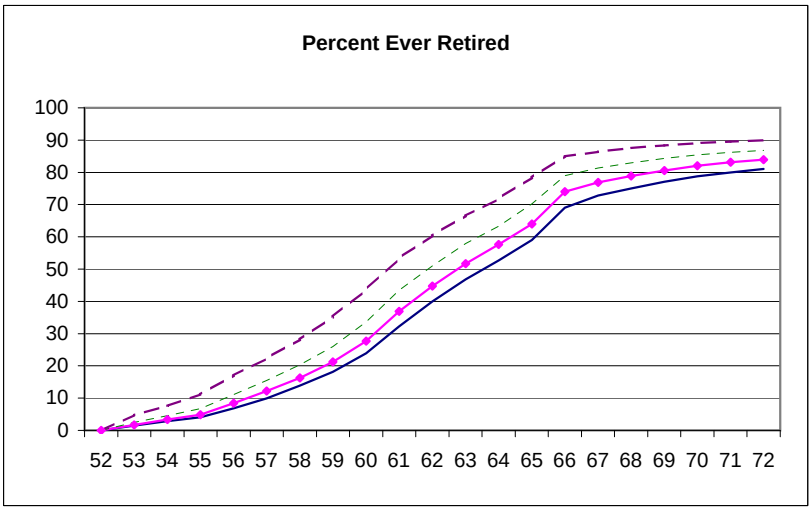
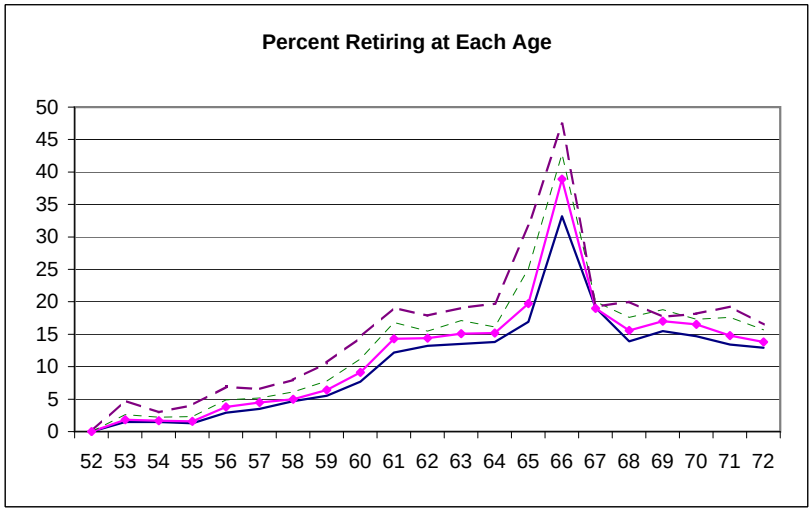


Table 5: Patterns of Retirement Based on LAD Taxfiler Data, with Alternative Definitions of R*, 1982c Male Cohort

	R=0.00*	*R*=0.10*	*R*=0.25*	*R*=0.50*
Percent Ever Retired				
52	0.0	0.0	0.0	0.0
53	1.5	1.7	2.5	4.8
54	2.9	3.4	4.6	7.6
55	4.1	4.9	6.7	11.2
56	6.8	8.4	11.1	17.1
57	9.9	12.2	15.5	22.3
58	13.9	16.3	20.3	28.2
59	18.2	21.2	26.0	35.2
60	23.9	27.7	33.6	43.7
61	32.2	36.9	43.5	53.3
62	40.0	44.7	51.0	60.4
63	46.8	51.7	57.9	66.6
64	52.7	57.6	63.3	71.8
65	59.0	64.0	70.2	78.4
66	69.0	74.0	79.0	85.0
67	72.8	76.9	81.3	86.4
68	75.0	78.9	82.9	87.6
69	77.1	80.6	84.3	88.4
70	78.8	82.0	85.4	89.1
71	80.0	83.1	86.2	89.6
72	81.1	83.9	86.8	90.0
Percent Retiring at Each Age				
52	0.0	0.0	0.0	0.0
53	1.5	1.8	2.6	4.8
54	1.5	1.7	2.2	3.0
55	1.3	1.6	2.3	4.1
56	2.9	3.8	4.9	6.9
57	3.5	4.5	5.2	6.6
58	4.7	5.0	6.1	8.0
59	5.5	6.4	7.8	10.6
60	7.7	9.1	11.2	14.5
61	12.2	14.3	16.8	19.1
62	13.2	14.4	15.5	17.9
63	13.5	15.1	17.1	19.1
64	13.8	15.2	16.1	19.7
65	16.9	19.7	25.1	31.7
66	33.2	38.9	42.8	47.4
67	19.1	19.0	20.0	19.3
68	13.9	15.6	17.6	20.0
69	15.5	17.0	18.8	17.7
70	14.7	16.5	17.3	18.2
71	13.4	14.8	17.6	19.3
72	12.9	13.8	15.7	16.5
Percent Retired and Alive				
52	0.0	0.0	0.0	0.0
53	1.5	1.8	2.6	4.8
54	2.8	3.3	4.5	7.4
55	3.7	4.6	6.3	10.7
56	6.5	8.1	10.8	16.7
57	9.6	12.0	15.3	22.0
58	13.7	16.2	20.2	27.9
59	18.3	21.3	26.1	35.2
60	24.3	28.2	34.3	44.4
61	33.3	38.3	45.1	54.7
62	41.9	47.0	53.4	62.7
63	49.6	54.8	61.2	69.6
64	56.4	61.5	67.3	75.4
65	63.6	69.0	75.4	83.1
66	75.6	80.9	85.9	91.1
67	80.1	84.4	88.6	92.7
68	82.8	86.8	90.5	94.2
69	85.3	88.9	92.2	95.2
70	87.4	90.7	93.5	96.0
71	89.0	92.0	94.6	96.8
72	90.3	93.1	95.5	97.3





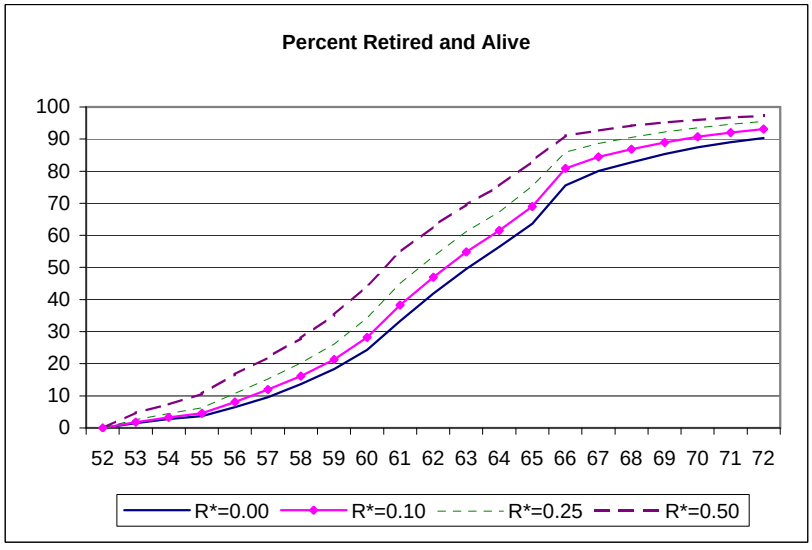
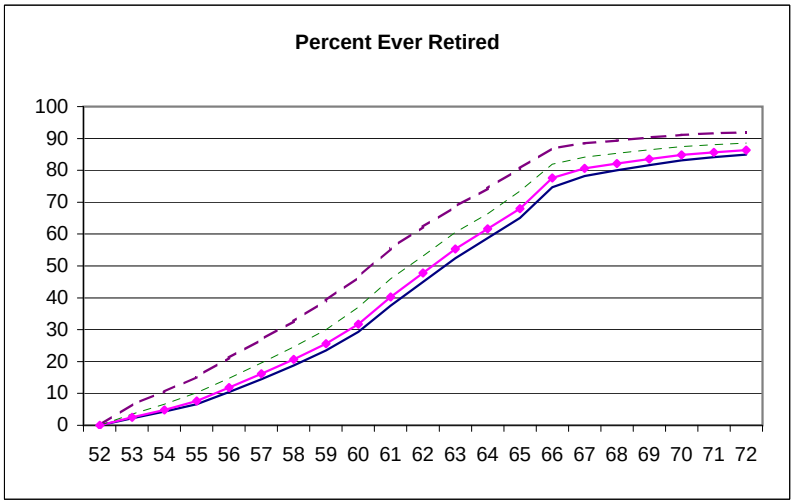
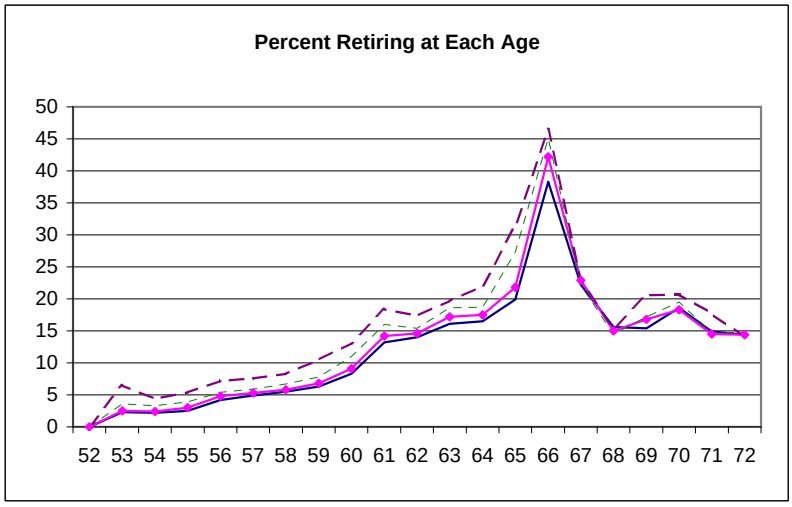


Table 6: Patterns of Retirement Based on LAD Taxfiler Data, with Alternative Definitions of R*, 1982c Female Cohort

	R=0.00*	*R*=0.10*	*R*=0.25*	*R*=0.50*
Percent Ever Retired				
52	0.0	0.0	0.0	0.0
53	2.2	2.5	3.5	6.5
54	4.3	4.8	6.6	10.6
55	6.6	7.6	10.2	15.2
56	10.4	11.8	14.8	21.2
57	14.5	16.2	19.6	26.9
58	18.8	20.7	24.6	32.6
59	23.5	25.6	30.0	39.2
60	29.3	31.7	37.0	46.5
61	37.5	40.3	46.0	55.4
62	45.0	47.8	53.1	62.2
63	52.4	55.3	60.5	68.6
64	58.7	61.6	66.4	74.3
65	65.1	68.0	73.5	80.6
66	74.7	77.6	81.9	86.9
67	78.2	80.6	84.1	88.6
68	80.0	82.1	85.3	89.4
69	81.6	83.5	86.4	90.4
70	83.1	84.8	87.4	91.2
71	84.1	85.6	88.1	91.7
72	84.9	86.3	88.6	92.0
Percent Retiring at Each Age				
52	0.0	0.0	0.0	0.0
53	2.3	2.5	3.6	6.5
54	2.2	2.4	3.3	4.4
55	2.5	3.0	3.9	5.4
56	4.2	4.8	5.4	7.2
57	4.9	5.3	5.9	7.6
58	5.5	5.8	6.7	8.3
59	6.3	6.8	7.8	10.5
60	8.3	9.1	11.0	13.1
61	13.2	14.2	16.0	18.4
62	14.0	14.6	15.4	17.4
63	16.1	17.2	18.6	19.7
64	16.5	17.5	18.7	22.0
65	19.9	21.8	27.3	31.4
66	38.3	42.2	45.1	46.5
67	22.2	22.9	22.1	22.8
68	15.6	15.0	14.5	15.4
69	15.4	16.8	17.2	20.6
70	18.6	18.3	19.5	20.7
71	14.9	14.5	14.7	17.7
72	14.4	14.4	14.8	14.0
Percent Retired and Alive				
52	0.0	0.0	0.0	0.0
53	2.3	2.5	3.6	6.5
54	4.2	4.7	6.5	10.2
55	6.2	7.2	9.6	14.3
56	9.9	11.2	14.0	19.9
57	14.0	15.5	18.6	25.4
58	18.4	20.0	23.6	31.0
59	23.3	25.2	29.2	37.8
60	29.5	31.8	36.7	45.6
61	38.5	41.2	46.5	55.2
62	46.9	49.6	54.5	62.8
63	55.2	58.0	62.7	69.9
64	62.5	65.3	69.6	76.4
65	70.0	72.9	77.8	83.8
66	81.5	84.3	87.9	91.3
67	85.5	87.8	90.5	93.2
68	87.7	89.6	91.9	94.3
69	89.6	91.3	93.3	95.3
70	91.5	92.9	94.5	96.4
71	92.7	93.9	95.3	97.1
72	93.6	94.8	96.0	97.4





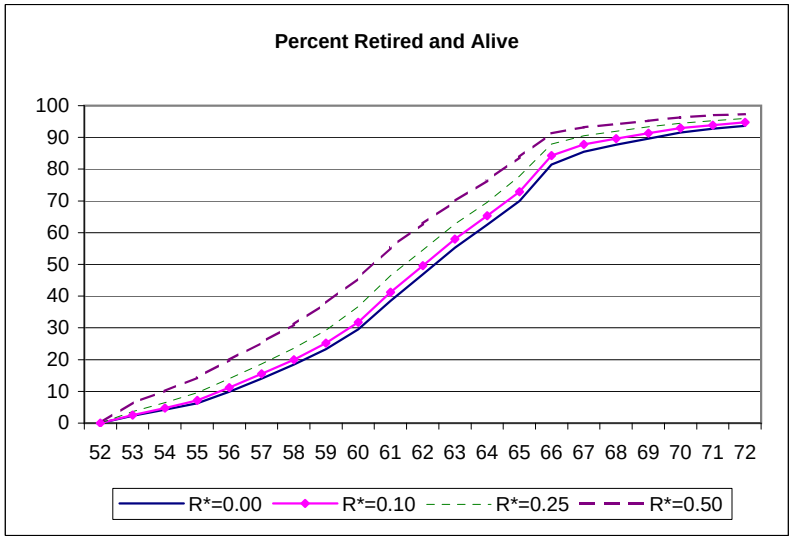


Table 7: Comparisons of LFS and LAD Cohort Activity Indexes: 1982c Male and Female Cohorts

Age	Males					Females				
	LFS	LAD				LFS	LAD			
		R*=0	R*=.10	R*=.25	R*=.50		R*=0	R*=.10	R*=.25	R*=.50
52	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
53	96.4	97.4	97.1	96.3	94.1	104.5	96.5	96.2	95.2	92.3
54	95.2	94.8	94.4	93.2	90.4	90.6	93.3	92.9	91.1	87.5
55	95.5	92.6	91.8	90.1	85.9	94.0	89.9	89.0	86.6	82.1
56	90.8	89.0	87.4	84.8	79.3	92.5	85.2	83.9	81.3	75.7
57	88.0	85.1	82.8	79.8	73.5	82.4	80.0	78.6	75.8	69.4
58	81.1	80.3	77.9	74.2	67.1	82.5	74.8	73.3	70.0	63.3
59	74.5	75.0	72.2	67.8	59.4	65.5	69.3	67.7	64.0	56.3
60	63.7	68.5	65.0	59.5	50.3	57.7	63.0	61.0	56.6	48.6
61	59.6	59.5	55.1	49.0	40.4	49.4	54.3	51.9	47.2	39.5
62	54.7	51.1	46.7	41.0	32.9	48.7	46.2	43.9	39.6	32.4
63	40.6	43.7	39.2	33.7	26.3	36.7	38.6	36.2	32.1	26.0
64	34.7	37.1	32.8	27.9	20.9	33.3	32.0	29.6	25.9	20.1
65	24.1	30.7	26.1	20.8	14.2	19.5	25.5	23.0	18.8	13.7
66	21.9	20.2	15.8	11.7	7.4	14.0	15.5	13.2	10.2	7.3
67	17.0	16.1	12.6	9.3	5.9	12.1	12.1	10.1	7.9	5.6
68	15.0	13.7	10.5	7.5	4.6	9.2	10.1	8.5	6.7	4.7
69	13.2	11.5	8.6	6.1	3.8	9.3	8.4	7.1	5.5	3.8
70	13.1	9.6	7.1	5.0	3.0	7.8	6.8	5.7	4.4	2.9
71	11.7	8.2	6.0	4.0	2.4	7.0	5.7	4.8	3.7	2.3
72	9.5	7.0	5.0	3.3	1.9	6.0	5.0	4.0	3.1	2.0

Table 8: Ages at Which Selected Proportions of LAD Taxfilers Had Retired, with Alternative Definitions of R*: Male Cohorts, 1982c -- 1997c

	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c
R=0.00*																
25%	60.1	59.9	59.6	59.3	59.1	59.0	58.9	58.9	59.1	59.3	59.5	59.7	59.9	--	--	--
50%	63.1	63.0	62.9	62.9	63.1	63.1	63.4	63.7	63.9	--	--	--	--	--	--	--
75%	65.9	66.1	66.3	66.4	66.6	66.8	--	--	--	--	--	--	--	--	--	--
90%	71.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R=0.10*																
25%	59.5	59.4	59.0	58.7	58.5	58.2	58.2	58.1	58.2	58.4	58.6	58.7	58.9	--	--	--
50%	62.4	62.3	62.1	62.0	62.0	62.1	62.3	62.4	62.7	--	--	--	--	--	--	--
75%	65.5	65.6	65.6	65.6	65.7	65.8	65.9	--	--	--	--	--	--	--	--	--
90%	69.6	69.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--
R=0.25*																
25%	58.8	58.6	58.2	57.9	57.6	57.3	57.1	57.1	57.1	57.3	57.5	57.6	57.9	58.0	--	--
50%	61.6	61.5	61.2	61.1	61.0	60.9	61.0	61.2	61.5	61.7	--	--	--	--	--	--
75%	65.0	65.0	65.1	65.1	65.1	65.2	65.3	--	--	--	--	--	--	--	--	--
90%	67.7	67.9	68.2	68.2	--	--	--	--	--	--	--	--	--	--	--	--
R=0.50*																
25%	57.5	57.4	57.1	56.6	56.4	56.0	55.8	55.8	55.9	56.0	56.1	56.3	56.6	56.6	56.8	--
50%	60.5	60.4	60.2	60.0	59.8	59.7	59.7	59.8	60.1	60.3	60.6	60.6	--	--	--	--
75%	63.9	64.0	64.0	63.9	64.0	64.0	64.2	64.3	--	--	--	--	--	--	--	--
90%	65.9	66.0	66.0	66.0	66.1	66.3	--	--	--	--	--	--	--	--	--	--
Age at which LFAI based on LFS cohort reaches 50.0																
	62.3	61.8	61.9	61.7	61.8	62.0	62.4	63.4	63.9	63.9	--	--	--	--	--	--

Table 9: Ages at Which Selected Proportions of LAD Taxfilers Had Retired, with Alternative Definitions of R*: Female Cohorts, 1982c -- 1997c

	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c
R=0.00*																
25%	59.3	59.1	59.1	58.6	58.6	58.2	58.1	58.1	58.0	58.0	58.2	58.2	58.5	58.7	--	--
50%	62.4	62.0	62.0	61.7	61.6	61.6	61.6	61.8	62.1	62.2	--	--	--	--	--	--
75%	65.4	65.4	65.5	65.5	65.6	65.6	65.6	--	--	--	--	--	--	--	--	--
90%	69.2	69.0	69.6	--	--	--	--	--	--	--	--	--	--	--	--	--
R=0.10*																
25%	59.0	58.8	58.7	58.3	58.2	57.8	57.7	57.6	57.5	57.3	57.5	57.7	58.0	58.0	--	--
50%	62.0	61.7	61.6	61.3	61.3	61.1	61.0	61.2	61.4	61.6	61.7	--	--	--	--	--
75%	65.2	65.1	65.2	65.2	65.3	65.3	65.4	--	--	--	--	--	--	--	--	--
90%	68.2	68.2	68.7	68.7	--	--	--	--	--	--	--	--	--	--	--	--
R=0.25*																
25%	58.2	58.1	58.0	57.6	57.6	57.2	57.0	56.8	56.7	56.6	56.5	56.9	57.0	57.2	57.4	--
50%	61.4	61.1	60.9	60.7	60.7	60.5	60.4	60.5	60.6	60.7	60.8	--	--	--	--	--
75%	64.7	64.5	64.6	64.5	64.7	64.7	64.8	--	--	--	--	--	--	--	--	--
90%	66.8	67.1	67.0	67.2	67.8	--	--	--	--	--	--	--	--	--	--	--
R=0.50*																
25%	56.9	56.8	56.7	56.5	56.4	55.9	55.8	55.7	55.6	55.7	55.6	55.7	55.9	55.9	56.2	56.5
50%	60.5	60.3	60.1	59.9	59.8	59.6	59.3	59.4	59.5	59.7	59.8	60.1	--	--	--	--
75%	63.8	63.6	63.4	63.4	63.5	63.5	63.5	63.8	--	--	--	--	--	--	--	--
90%	65.8	65.9	65.8	65.8	66.0	66.0	--	--	--	--	--	--	--	--	--	--
Age at which LFAI based on LFS cohort reaches 50.0																
	60.9	61.0	60.8	60.2	60.0	60.3	60.4	61.0	60.7	61.3	63.1	--	--	--	--	--

Table A1: Percentage Retirement Rates, with R* = 0: Male Cohorts 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	1.5	1.5	1.3	1.6	1.7	2.0	2.4	2.9	3.1	3.0	3.1	3.1	2.8	2.8	2.6	2.3	2.0	2.1	2.0	1.9
54	1.5	1.3	1.4	1.4	1.6	1.7	2.3	2.0	2.3	2.3	2.3	1.9	2.3	1.8	1.7	1.5	1.5	1.5	1.5	
55	1.3	1.6	1.7	2.1	2.3	3.2	2.7	3.3	3.2	2.8	2.8	2.9	2.7	2.4	2.0	2.2	1.9	1.7		
56	2.9	2.7	3.5	3.7	4.4	4.3	4.8	4.6	4.8	4.7	4.5	4.1	3.7	4.0	3.6	3.3	3.5			
57	3.5	4.0	4.2	5.1	4.9	5.6	5.2	5.6	4.9	5.1	4.3	3.8	3.8	4.0	3.7	3.3				
58	4.7	4.5	5.4	5.5	6.2	5.8	5.5	5.4	5.0	4.4	4.2	4.5	4.2	3.9	3.7					
59	5.5	6.5	7.0	6.9	6.8	6.6	6.8	6.4	5.4	5.2	4.9	5.1	4.6	4.6						
60	7.7	8.5	8.3	8.6	7.8	7.8	7.4	6.2	6.3	6.0	6.1	5.5	5.6							
61	12.2	12.5	13.0	12.3	11.7	11.5	10.0	9.6	9.4	9.3	8.4	8.2								
62	13.2	12.3	11.8	11.8	10.5	9.8	9.2	9.3	8.5	8.3	7.5									
63	13.5	12.6	11.6	10.9	9.8	9.2	9.4	8.4	8.1	7.4										
64	13.8	12.8	11.7	11.3	10.1	10.7	9.6	8.7	8.7											
65	16.9	14.9	13.8	13.5	13.1	12.7	12.0	11.8												
66	33.2	32.6	30.8	29.5	31.1	27.4	26.7													
67	19.1	18.7	19.5	18.2	16.3	17.3														
68	13.9	14.1	14.1	13.1	12.5															
69	15.5	14.1	12.4	13.1																
70	14.7	14.2	12.4																	
71	13.4	12.7																		
72	12.9																			

Table A2: Percentage Retirement Rates, with R* = 0: Female Cohorts 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.3	2.2	2.1	2.4	2.2	2.9	2.7	3.2	3.2	3.2	3.3	3.4	3.4	3.6	3.5	2.6	2.5	2.6	2.4	2.4
54	2.2	2.0	1.7	2.3	2.4	2.6	3.0	3.0	3.0	3.0	2.8	2.7	3.2	3.1	2.4	2.2	2.2	2.2	1.8	
55	2.5	2.1	3.1	2.6	2.9	3.8	3.7	4.0	4.4	4.1	3.9	4.2	4.1	3.2	3.4	2.9	2.8	2.6		
56	4.2	4.7	4.1	4.9	5.0	5.3	5.8	5.7	5.8	5.9	6.2	5.5	4.6	5.8	4.6	4.4	4.7			
57	4.9	4.7	5.0	5.6	5.4	6.1	6.3	6.4	6.1	6.6	5.8	4.9	5.7	4.7	4.6	4.3				
58	5.5	5.7	5.9	6.5	6.6	7.0	6.9	6.7	6.9	6.6	5.9	6.8	5.0	5.1	5.0					
59	6.3	7.3	6.9	8.3	8.3	7.9	8.0	8.4	7.4	6.3	7.4	6.0	6.0	5.4						
60	8.3	8.9	9.3	10.1	10.8	9.4	10.3	9.2	7.6	8.9	7.3	6.7	6.2							
61	13.2	15.1	15.9	15.5	15.1	14.9	14.6	12.3	13.1	12.3	12.2	11.2								
62	14.0	15.0	14.5	14.6	14.6	13.8	11.4	12.6	10.4	9.7	9.6									
63	16.1	16.2	15.3	14.2	12.6	11.0	13.3	10.9	10.0	9.8										
64	16.5	16.5	14.4	13.9	11.8	15.2	10.7	12.0	10.3											
65	19.9	18.9	16.3	15.3	16.2	13.4	14.6	13.1												
66	38.3	35.9	34.8	34.8	32.7	31.8	33.1													
67	22.2	20.1	24.4	19.8	18.8	18.9														
68	15.6	19.2	14.1	16.0	14.2															
69	15.4	15.6	15.8	14.0																
70	18.6	17.0	15.5																	
71	14.9	13.9																		
72	14.4																			

Table A3: Percentage Retirement Rates, with R* = .10: Male Cohorts 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	1.8	1.8	1.7	2.0	1.9	2.4	3.0	3.4	3.6	3.5	**3.8**	**3.8**	3.4	3.7	3.2	2.8	2.5	2.7	2.4	2.4
54	1.7	1.5	1.6	1.7	2.0	2.3	2.8	2.7	2.8	**3.0**	**3.1**	2.5	2.8	2.3	2.0	2.0	1.9	1.9	1.8	
55	1.6	2.0	2.2	2.5	2.8	3.7	3.4	**3.8**	**4.0**	3.5	3.2	3.5	3.3	2.7	2.5	2.6	2.3	2.1		
56	3.8	3.6	4.1	4.5	5.4	5.6	**6.1**	5.7	5.7	5.8	5.9	5.2	4.5	5.2	4.8	4.5	4.6			
57	4.5	4.5	5.0	6.2	6.0	**6.5**	6.2	6.3	6.1	6.0	5.0	4.6	4.6	4.6	4.6	4.0				
58	5.0	5.0	6.4	6.5	6.8	**6.9**	6.2	6.6	5.9	5.1	4.9	5.1	4.9	4.7	4.5					
59	6.4	7.6	8.1	7.7	**8.1**	7.5	7.9	7.5	6.5	6.2	5.9	5.9	5.7	5.5						
60	9.1	9.5	9.9	**9.9**	9.1	9.1	8.9	7.3	7.2	7.2	7.1	6.6	6.4							
61	14.3	14.2	**15.1**	14.2	13.9	13.4	12.1	11.5	11.0	10.6	10.0	9.8								
62	**14.4**	14.1	12.8	12.9	11.3	10.7	9.9	10.1	9.4	9.1	8.6									
63	**15.1**	14.3	12.8	12.1	11.0	10.7	10.5	10.0	9.2	8.7										
64	15.2	14.5	13.1	12.7	11.8	12.2	11.0	10.0	9.7											
65	19.7	17.2	16.5	16.1	16.2	15.4	14.7	14.1												
66	38.9	37.3	36.3	35.7	35.1	32.0	31.6													
67	19.0	19.9	19.7	19.8	17.1	17.9														
68	15.6	15.6	15.4	15.5	14.5															
69	17.0	16.7	13.9	15.4																
70	16.5	16.0	14.9																	
71	14.8	14.7																		
72	13.8																			

Table A4: Percentage Retirement Rates, with R* = .10: Female Cohorts 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.5	2.6	2.4	2.8	2.6	3.4	3.2	3.6	3.6	3.7	3.8	4.0	3.8	**4.9**	4.3	3.1	2.9	3.0	2.8	2.9
54	2.4	2.1	2.1	2.6	2.6	3.0	3.2	3.4	3.5	3.4	3.5	3.1	**4.4**	3.7	2.8	2.6	2.7	2.6	2.3	
55	3.0	2.4	3.5	3.4	3.7	4.1	4.3	4.7	5.2	4.8	4.3	**5.8**	4.5	3.4	3.8	3.3	3.2	3.1		
56	4.8	5.3	4.5	5.1	5.2	5.9	6.5	6.4	6.5	6.7	**7.9**	6.2	5.4	6.2	5.3	5.3	5.5			
57	5.3	5.2	5.7	6.0	5.9	6.6	7.0	7.0	6.5	**8.1**	6.2	5.4	5.5	5.1	5.2	4.9				
58	5.8	6.0	6.2	7.2	7.3	7.7	7.3	7.3	**8.6**	7.0	6.3	6.6	5.6	5.5	5.4					
59	6.8	7.8	7.6	9.0	8.9	8.5	8.8	**9.8**	7.5	6.8	7.2	6.4	6.4	5.7						
60	9.1	9.7	10.0	10.7	11.4	10.3	**11.5**	9.8	8.6	8.9	7.8	7.4	6.8							
61	14.2	16.4	17.3	16.7	16.7	**17.5**	15.7	13.4	13.5	13.2	13.7	12.2								
62	14.6	15.6	15.6	**15.8**	15.3	14.6	12.0	12.9	11.2	10.3	10.4									
63	**17.2**	16.3	15.8	15.0	12.7	11.4	13.2	11.4	10.6	10.6										
64	17.5	17.8	14.9	14.8	12.9	15.0	11.5	12.4	11.3											
65	21.8	20.4	18.9	17.5	17.4	15.1	16.5	14.4												
66	42.2	39.8	38.8	38.1	35.7	34.6	35.1													
67	22.9	20.1	21.9	18.7	19.5	19.6														
68	15.0	17.8	13.1	17.7	13.7															
69	16.8	16.4	16.2	15.1																
70	18.3	17.6	16.7																	
71	14.5	14.3																		
72	14.4																			

Table A5: Percentage Retirement Rates, with R* = .25: Male Cohorts 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.6	2.5	2.4	2.9	2.8	3.6	4.4	4.9	5.1	4.9	5.1	5.2	4.6	5.0	4.4	3.9	3.5	3.8	3.5	3.4
54	2.2	2.1	2.3	2.2	2.4	3.3	3.8	3.7	3.9	3.9	3.9	3.2	3.7	2.9	2.5	2.7	2.6	2.5	2.3	
55	2.3	2.7	2.9	3.2	4.1	4.7	4.6	5.1	4.9	4.3	4.1	4.6	4.1	3.5	3.4	3.4	3.4	3.0		
56	4.9	4.6	5.3	6.1	7.1	7.1	7.5	7.5	7.2	7.3	7.3	6.2	5.8	6.3	6.1	5.6	5.7			
57	5.2	5.6	6.3	7.6	7.3	8.1	7.7	7.2	7.0	7.1	5.6	5.7	5.5	5.4	5.4	5.0				
58	6.1	6.6	7.9	7.6	8.2	7.9	7.5	7.9	7.3	6.0	5.9	6.0	5.7	5.8	5.3					
59	7.8	9.2	9.3	9.1	9.3	8.8	8.8	8.7	7.3	7.3	6.8	6.8	7.0	6.4						
60	11.2	11.0	11.7	11.9	10.9	11.2	10.8	9.1	8.6	8.3	8.5	8.2	7.2							
61	16.8	16.2	17.1	16.1	15.9	15.1	13.3	13.0	13.0	12.6	11.7	11.1								
62	15.5	15.5	14.1	14.5	12.9	11.5	11.4	11.1	10.2	10.5	9.2									
63	17.1	15.7	14.3	13.8	12.3	12.4	11.5	11.5	10.5	9.4										
64	16.1	16.3	14.8	14.1	13.2	13.4	12.4	11.7	11.4											
65	25.1	22.8	21.6	21.2	21.6	20.4	19.3	18.4												
66	42.8	41.8	41.3	40.6	39.0	37.1	35.7													
67	20.0	20.0	18.9	19.7	19.0	18.9														
68	17.6	17.4	17.1	17.9	15.2															
69	18.8	18.0	15.2	15.0																
70	17.3	18.1	16.9																	
71	17.6	15.0																		
72	15.7																			

Table A6: Percentage Retirement Rates, with R* = .25: Female Cohorts 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	3.6	3.6	3.4	3.9	3.6	4.6	4.5	5.0	5.2	5.1	5.3	5.3	5.1	6.7	5.9	4.3	4.0	4.2	3.8	3.9
54	3.3	2.9	2.6	3.1	3.3	3.5	4.4	4.1	4.6	4.2	4.6	4.1	6.1	4.4	3.6	3.5	3.5	3.3	3.0	
55	3.9	3.8	4.6	4.6	4.8	5.2	5.2	5.7	6.3	5.8	5.3	7.2	4.8	4.2	4.4	4.1	4.1	3.9		
56	5.4	5.9	5.7	5.9	6.2	7.4	7.8	8.1	7.8	8.4	9.9	7.1	6.3	6.9	6.2	6.2	6.6			
57	5.9	6.1	6.3	7.0	6.8	7.7	7.9	8.1	7.7	9.4	7.1	6.2	6.3	5.7	6.0	5.6				
58	6.7	7.1	7.3	8.1	8.5	8.4	8.5	8.5	9.7	7.4	6.8	7.3	6.5	6.3	6.3					
59	7.8	8.6	9.0	10.0	9.9	9.6	10.8	11.7	8.3	7.7	7.6	7.1	7.3	6.6						
60	11.0	11.2	12.0	12.5	13.1	12.8	13.3	10.3	9.5	9.9	9.1	8.9	8.1							
61	16.0	18.4	19.1	18.3	18.3	19.3	16.8	15.0	15.3	14.4	15.1	13.4								
62	15.4	16.5	16.0	16.6	16.9	14.4	13.2	13.5	11.9	11.5	11.0									
63	18.6	17.7	17.1	16.8	13.9	12.7	13.7	12.1	12.1	11.4										
64	18.7	19.3	16.8	15.9	14.6	14.7	12.5	13.3	12.4											
65	27.3	23.5	23.1	20.7	20.5	18.8	20.3	17.8												
66	45.1	43.6	43.3	41.1	38.4	38.7	37.7													
67	22.1	17.4	21.3	19.8	19.9	18.3														
68	14.5	17.6	14.7	16.9	14.6															
69	17.2	17.0	17.4	15.1																
70	19.5	20.3	20.5																	
71	14.7	15.3																		
72	14.8																			

Table A7: Percentage Retirement Rates, with R* = .50: Male Cohorts 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	4.8	4.6	4.5	5.1	4.9	6.5	8.4	8.8	8.6	8.3	8.3	8.3	7.6	7.9	6.8	6.1	5.7	6.3	5.9	5.7
54	3.0	3.2	3.5	3.4	4.2	5.7	5.9	5.8	5.6	5.4	5.0	4.4	4.7	3.8	3.7	3.8	4.0	3.6	3.3	
55	4.1	4.2	4.4	5.3	7.0	6.9	6.7	7.4	6.8	6.3	5.9	6.3	5.5	5.1	5.3	5.2	5.2	4.6		
56	6.9	6.1	7.3	9.1	9.3	9.8	9.8	9.1	8.9	8.9	8.7	7.7	7.2	7.7	7.7	7.2	6.9			
57	6.6	7.7	8.6	9.5	9.4	9.6	8.9	9.0	8.4	8.4	7.0	7.1	6.8	6.8	6.8	6.1				
58	8.0	9.5	10.0	9.8	10.2	9.9	9.8	9.4	9.0	7.7	7.3	7.3	7.5	7.5	6.6					
59	10.6	11.2	11.9	11.3	10.9	10.5	10.3	9.9	8.6	8.7	8.1	8.8	8.2	7.7						
60	14.5	14.4	14.9	14.3	14.7	13.7	13.3	11.8	11.1	10.6	10.9	10.2	9.4							
61	19.1	19.0	18.9	18.9	17.1	16.7	15.0	15.1	13.9	14.6	13.1	12.8								
62	17.9	16.3	15.6	16.2	14.7	12.9	12.9	12.8	12.4	12.2	10.6									
63	19.1	17.9	16.3	15.3	14.9	15.1	13.4	13.5	12.8	11.4										
64	19.7	19.1	16.0	16.4	15.2	15.8	15.3	14.6	12.9											
65	31.7	31.3	30.4	28.6	29.8	28.1	27.3	25.4												
66	47.4	44.2	44.5	43.1	43.4	42.2	38.5													
67	19.3	21.9	23.2	23.3	20.9	18.2														
68	20.0	19.6	18.6	21.1	17.3															
69	17.7	19.1	16.6	16.1																
70	18.2	21.0	18.8																	
71	19.3	16.4																		
72	16.5																			

Table A8: Percentage Retirement Rates, with R* = .50: Female Cohorts 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	6.5	5.9	6.1	6.5	6.5	7.8	8.2	8.7	9.1	8.6	8.8	8.5	8.3	9.8	8.7	6.8	6.4	6.5	6.1	6.0
54	4.4	4.6	4.5	4.7	4.9	6.0	5.9	6.1	6.4	6.3	6.4	5.7	7.7	5.2	4.6	4.7	4.7	4.4	4.2	
55	5.4	5.8	5.3	6.1	6.6	6.7	7.4	7.7	8.0	7.5	7.3	8.8	6.1	5.9	6.1	5.9	5.6	5.6		
56	7.2	7.4	8.0	8.3	8.2	9.6	9.7	9.6	9.7	10.0	11.2	8.7	7.6	8.2	7.6	7.7	8.0			
57	7.6	8.1	8.5	8.4	8.5	8.9	9.4	9.6	9.7	11.1	8.1	7.5	7.4	6.9	7.4	6.9				
58	8.3	9.3	9.0	9.5	10.2	10.1	10.6	10.2	11.2	8.5	7.9	8.5	7.7	7.4	7.0					
59	10.5	10.1	10.8	11.7	11.6	11.6	12.7	12.8	9.1	8.8	9.0	8.9	8.8	7.7						
60	13.1	14.1	15.8	15.5	16.0	15.7	16.1	13.0	11.8	12.3	11.9	11.4	11.0							
61	18.4	19.9	20.6	20.0	21.2	20.7	17.5	16.7	16.7	16.3	16.6	14.8								
62	17.4	18.2	17.4	18.3	17.1	14.9	14.6	15.0	13.0	12.5	12.2									
63	19.7	19.6	19.0	17.5	15.3	14.7	14.7	14.2	14.1	12.7										
64	22.0	21.3	19.4	17.9	16.1	14.9	14.5	14.6	14.2											
65	31.4	27.5	29.5	27.2	26.1	25.6	27.1	24.8												
66	46.5	44.9	44.6	44.1	40.4	42.0	40.9													
67	22.8	20.2	20.8	20.8	19.2	19.5														
68	15.4	19.4	17.3	19.3	15.8															
69	20.6	15.7	18.5	15.0																
70	20.7	23.3	21.3																	
71	17.7	13.8																		
72	14.0																			

Table A9: Percentage Still Living and Retired, with R* = 0: Male Cohorts, 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	1.5	1.5	1.3	1.6	1.7	2.0	2.4	2.9	3.1	3.0	3.1	3.1	2.8	2.8	2.6	2.3	2.0	2.1	2.0	1.9
54	2.8	2.6	2.7	3.0	3.1	3.7	4.6	4.9	5.3	5.1	5.4	4.9	4.9	4.6	4.2	3.7	3.4	3.5	3.4	
55	3.7	4.0	4.2	4.9	5.3	6.6	7.1	7.7	8.0	7.5	7.6	7.6	7.3	6.6	6.0	5.6	5.1	5.1		
56	6.5	6.4	7.4	8.2	9.4	10.5	11.4	11.7	12.3	11.8	11.7	11.2	10.6	10.3	9.3	8.7	8.4			
57	9.6	10.0	11.1	12.8	13.6	15.3	15.9	16.4	16.4	16.1	15.3	14.4	13.9	13.7	12.6	11.6				
58	13.7	14.0	15.7	17.4	18.8	20.1	20.2	20.7	20.4	19.6	18.7	18.2	17.4	17.0	15.7					
59	18.3	19.3	21.5	22.9	24.2	25.1	25.4	25.6	24.6	23.6	22.6	22.3	21.1	20.7						
60	24.3	26.0	27.9	29.3	29.9	30.7	30.7	30.1	29.2	28.0	27.2	26.4	25.4							
61	33.3	35.1	37.0	37.8	37.9	38.5	37.4	36.5	35.7	34.6	33.2	32.3								
62	41.9	42.8	44.2	45.0	44.3	44.3	43.0	42.3	41.1	39.8	38.0									
63	49.6	49.9	50.5	50.8	49.5	49.4	48.1	46.9	45.7	44.1										
64	56.4	56.2	56.1	56.2	54.5	54.6	52.9	51.4	50.3											
65	63.6	62.6	62.1	62.0	60.4	60.3	58.5	56.9												
66	75.6	74.7	73.6	73.2	72.5	71.0	69.5													
67	80.1	79.3	78.7	77.9	76.9	75.9														
68	82.8	82.1	81.6	80.7	79.7															
69	85.3	84.5	83.7	83.1																
70	87.4	86.5	85.6																	
71	89.0	88.2																		
72	90.3																			

Table A10: Percentage Still Living and Retired, with R* = 0: Female Cohorts, 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.3	2.2	2.1	2.4	2.2	2.9	2.7	3.2	3.2	3.2	3.3	3.4	3.4	3.6	3.5	2.6	2.5	2.6	2.4	2.4
54	4.2	3.9	3.8	4.7	4.6	5.5	5.7	6.2	6.1	6.1	6.1	5.8	6.5	6.6	5.9	4.8	4.5	4.6	4.2	
55	6.2	6.3	6.4	7.2	7.4	8.6	8.8	9.6	9.8	9.6	9.4	9.7	10.0	9.2	8.8	7.4	7.1	7.0		
56	9.9	9.9	10.0	11.2	11.4	13.1	13.9	14.5	14.8	14.6	14.8	14.4	13.9	14.3	12.8	11.4	11.3			
57	14.0	13.8	14.3	15.8	15.9	18.3	19.0	19.6	19.7	20.0	19.6	18.5	18.7	18.2	16.7	15.0				
58	18.4	18.4	19.0	21.2	21.3	23.8	24.4	24.7	25.0	25.2	24.1	24.0	22.6	22.2	20.8					
59	23.3	24.2	24.4	27.5	27.7	29.6	30.3	30.8	30.4	29.7	29.6	28.4	27.2	26.4						
60	29.5	30.6	31.4	34.7	35.3	36.1	37.3	37.1	35.6	35.9	34.7	33.1	31.6							
61	38.5	40.9	42.2	44.7	45.0	45.5	46.3	44.8	43.9	43.7	42.6	40.5								
62	46.9	49.7	50.4	52.7	52.8	53.0	52.3	51.6	49.6	49.0	48.0									
63	55.2	57.7	57.9	59.3	58.7	58.1	58.5	56.8	54.6	54.0										
64	62.5	64.7	63.9	64.9	63.4	64.3	62.9	61.9	59.2											
65	70.0	71.3	69.7	70.3	69.4	69.1	68.3	66.8												
66	81.5	81.6	80.2	80.6	79.4	78.9	78.8													
67	85.5	85.3	85.0	84.3	83.2	82.8														
68	87.7	88.0	87.0	86.9	85.6															
69	89.6	89.9	89.1	88.6																
70	91.5	91.6	90.7																	
71	92.7	92.6																		
72	93.6																			

Table A11: Percentage Still Living and Retired, with R* = .10: Male Cohorts, 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	1.8	1.8	1.7	2.0	1.9	2.4	3.0	3.4	3.6	3.5	3.8	3.8	3.4	3.7	3.2	2.8	2.5	2.7	2.4	2.4
54	3.3	3.1	3.3	3.6	3.7	4.7	5.6	5.9	6.3	6.3	6.6	6.1	6.0	5.8	5.1	4.7	4.3	4.4	4.1	
55	4.6	4.9	5.2	5.9	6.4	7.9	8.5	9.3	9.7	9.4	9.4	9.3	9.0	8.3	7.3	7.0	6.4	6.3		
56	8.1	8.2	8.9	10.0	11.3	12.9	13.9	14.2	14.6	14.5	14.6	13.9	13.0	12.9	11.7	11.0	10.7			
57	12.0	12.2	13.3	15.4	16.5	18.4	19.1	19.3	19.5	19.4	18.7	17.8	16.9	16.8	15.7	14.5				
58	16.2	16.4	18.6	20.7	22.0	23.8	23.9	24.5	24.2	23.3	22.5	21.9	20.9	20.6	19.3					
59	21.3	22.4	25.0	26.6	28.1	29.2	29.6	30.0	28.9	27.9	27.0	26.4	25.3	24.9						
60	28.2	29.7	32.2	33.7	34.5	35.5	35.7	34.9	33.9	32.9	32.0	31.2	30.0							
61	38.3	39.5	42.2	43.0	43.5	43.9	43.2	42.1	41.0	39.8	38.8	37.8								
62	47.0	47.8	49.4	50.1	49.7	49.7	48.6	47.8	46.5	45.1	43.8									
63	54.8	55.1	55.7	56.0	55.1	55.0	53.9	52.8	51.2	49.8										
64	61.5	61.6	61.4	61.4	60.3	60.3	58.7	57.3	55.9											
65	69.0	68.1	67.6	67.6	66.6	66.4	64.7	63.2												
66	80.9	79.9	79.3	79.0	78.2	77.1	75.8													
67	84.4	83.8	83.3	83.1	81.8	81.1														
68	86.8	86.3	85.8	85.6	84.4															
69	88.9	88.5	87.6	87.8																
70	90.7	90.2	89.4																	
71	92.0	91.5																		
72	93.1																			

Table A12: Percentage Still Living and Retired, with R* = .10: Female Cohorts, 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.5	2.6	2.4	2.8	2.6	3.4	3.2	3.6	3.6	3.7	3.8	4.0	3.8	4.9	4.3	3.1	2.9	3.0	2.8	2.9
54	4.7	4.4	4.4	5.3	5.2	6.3	6.3	6.9	7.0	7.0	6.9	6.7	8.1	8.3	7.0	5.7	5.4	5.5	5.0	
55	7.2	7.1	7.3	8.2	8.3	9.6	9.9	10.8	11.3	11.0	10.8	11.9	11.9	11.2	10.3	8.5	8.2	8.2		
56	11.2	11.2	11.2	12.6	12.8	14.7	15.6	16.2	16.8	16.7	17.7	17.2	16.5	16.6	14.9	13.3	13.2			
57	15.5	15.4	16.0	17.6	17.6	20.1	21.1	21.6	22.0	23.2	22.6	21.6	20.9	20.6	19.2	17.3				
58	20.0	20.2	20.9	23.2	23.4	26.0	26.6	27.1	28.4	28.5	27.3	26.6	25.1	24.8	23.5					
59	25.2	26.2	26.8	29.9	30.0	32.0	33.0	34.1	33.7	33.2	32.4	31.2	29.9	29.1						
60	31.8	33.1	34.0	37.3	37.8	38.9	40.6	40.4	39.3	39.0	37.6	36.1	34.5							
61	41.2	43.9	45.3	47.7	48.0	49.5	49.8	48.4	47.4	46.9	46.1	43.9								
62	49.6	52.4	53.6	55.8	55.9	56.7	55.7	54.9	53.2	52.2	51.6									
63	58.0	60.2	60.9	62.3	61.4	61.6	61.5	60.0	58.1	57.3										
64	65.3	67.2	66.6	67.9	66.2	67.3	65.8	65.0	62.7											
65	72.9	73.8	72.9	73.5	72.1	72.2	71.4	69.9												
66	84.3	84.3	83.4	83.6	82.0	81.8	81.5													
67	87.8	87.4	87.0	86.6	85.5	85.3														
68	89.6	89.6	88.6	88.9	87.4															
69	91.3	91.2	90.5	90.5																
70	92.9	92.7	92.0																	
71	93.9	93.7																		
72	94.8																			

Table A13: Percentage Still Living and Retired, with R* = .25: Male Cohorts, 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.6	2.5	2.4	2.9	2.8	3.6	4.4	4.9	5.1	4.9	5.1	5.2	4.6	5.0	4.4	3.9	3.5	3.8	3.5	3.4
54	4.5	4.2	4.6	4.9	5.0	6.6	7.9	8.1	8.7	8.4	8.6	8.2	7.9	7.6	6.6	6.3	5.9	6.1	5.6	
55	6.3	6.6	7.1	7.8	8.8	10.8	11.8	12.5	12.8	12.2	12.1	12.2	11.5	10.7	9.7	9.4	8.9	8.8		
56	10.8	10.7	11.8	13.2	15.1	16.9	18.3	18.8	18.8	18.3	18.4	17.5	16.5	16.2	15.1	14.3	14.0			
57	15.3	15.6	17.2	19.6	21.1	23.5	24.2	24.3	24.3	23.9	22.8	22.1	20.9	20.5	19.6	18.5				
58	20.2	21.0	23.5	25.6	27.3	29.3	29.6	30.1	29.6	28.3	27.2	26.6	25.3	25.0	23.6					
59	26.1	28.0	30.4	32.1	33.8	35.2	35.6	36.0	34.5	33.3	32.0	31.5	30.5	29.6						
60	34.3	35.7	38.3	40.0	40.9	42.3	42.4	41.6	40.0	38.7	37.6	37.0	35.4							
61	45.1	46.0	48.6	49.4	50.1	50.7	49.8	49.0	47.7	46.3	44.8	43.9								
62	53.4	54.1	55.7	56.5	56.4	56.2	55.3	54.4	52.8	51.7	49.7									
63	61.2	61.1	61.8	62.4	61.6	61.5	60.2	59.5	57.6	56.1										
64	67.3	67.4	67.4	67.6	66.5	66.5	65.0	64.1	62.4											
65	75.4	74.7	74.3	74.4	73.7	73.3	71.7	70.5												
66	85.9	85.2	84.9	84.7	83.9	83.1	81.7													
67	88.6	88.1	87.7	87.7	86.9	86.2														
68	90.5	90.1	89.7	89.7	88.8															
69	92.2	91.8	91.2	91.2																
70	93.5	93.2	92.7																	
71	94.6	94.2																		
72	95.5																			

Table A14: Percentage Still Living and Retired, with R* = .25: Female Cohorts, 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	3.6	3.6	3.4	3.9	3.6	4.6	4.5	5.0	5.2	5.1	5.3	5.3	5.1	6.7	5.9	4.3	4.0	4.2	3.8	3.9
54	6.5	6.0	5.9	7.0	6.8	8.0	8.4	8.9	9.2	9.2	9.3	8.8	10.7	10.6	9.2	7.5	7.1	7.2	6.6	
55	9.6	9.3	9.5	10.7	10.6	12.1	12.9	13.5	14.6	13.8	13.9	15.2	14.8	14.1	13.0	11.2	10.8	10.7		
56	14.0	14.3	14.3	15.6	15.8	18.2	19.3	20.0	21.0	20.7	22.1	20.9	20.0	19.8	18.2	16.5	16.5			
57	18.6	19.0	19.4	21.1	21.1	24.1	25.2	26.0	26.7	27.9	27.4	25.6	24.8	24.2	22.9	21.0				
58	23.6	24.4	25.0	27.4	27.5	30.2	31.3	31.9	33.6	33.2	32.2	30.9	29.5	28.8	27.6					
59	29.2	30.6	31.5	34.4	34.4	36.6	38.6	39.8	38.9	38.1	37.2	35.7	34.5	33.4						
60	36.7	38.0	39.7	42.5	42.8	44.6	46.6	45.8	44.7	44.1	42.8	41.2	39.7							
61	46.5	49.2	51.0	52.9	53.2	55.2	55.4	53.8	53.0	52.1	51.3	49.1								
62	54.5	57.4	58.7	60.6	60.9	61.6	61.2	59.9	58.4	57.5	56.6									
63	62.7	64.8	65.7	67.1	66.3	66.4	66.5	64.7	63.4	62.3										
64	69.6	71.6	71.4	72.3	71.2	71.3	70.6	69.3	67.9											
65	77.8	78.2	77.9	78.0	77.0	76.7	76.5	74.8												
66	87.9	87.6	87.5	87.0	85.8	85.6	85.3													
67	90.5	89.8	90.1	89.6	88.6	88.2														
68	91.9	91.6	91.5	91.3	90.3															
69	93.3	93.0	93.0	92.6																
70	94.5	94.3	94.4																	
71	95.3	95.2																		
72	96.0																			

Table A15: Percentage Still Living and Retired, with R* = .50: Male Cohorts, 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	4.8	4.6	4.5	5.1	4.9	6.5	8.4	8.8	8.6	8.3	8.3	8.3	7.6	7.8	6.8	6.1	5.7	6.3	5.9	5.7
54	7.4	7.3	7.7	8.1	8.7	11.5	13.5	13.7	13.5	12.9	12.6	12.1	11.7	11.2	10.1	9.5	9.3	9.4	8.8	
55	10.7	11.0	11.5	12.8	14.9	17.4	19.0	19.8	19.1	18.2	17.5	17.4	16.4	15.5	14.7	13.9	13.9	13.4		
56	16.7	16.1	17.7	20.5	22.5	25.2	26.6	26.7	25.9	25.2	24.4	23.6	22.2	21.8	21.1	19.9	19.7			
57	22.0	22.4	24.5	27.8	29.5	32.1	32.8	33.1	31.9	31.2	29.5	28.8	27.3	26.9	26.2	24.6				
58	27.9	29.5	31.8	34.6	36.4	38.6	39.0	39.0	37.8	36.3	34.5	33.9	32.6	32.3	30.9					
59	35.2	37.1	39.8	41.8	43.1	44.8	45.1	44.9	42.9	41.7	39.6	39.6	37.9	37.3						
60	44.4	46.0	48.4	49.9	51.3	52.1	52.2	51.2	49.1	47.7	46.0	45.6	43.6							
61	54.7	56.1	57.9	59.2	59.4	59.9	59.1	58.4	56.0	55.2	53.0	52.5								
62	62.7	63.1	64.2	65.6	65.2	64.9	64.2	63.6	61.3	60.4	57.8									
63	69.6	69.5	69.9	70.7	70.2	70.1	68.9	68.3	66.2	64.8										
64	75.4	75.1	74.6	75.4	74.7	74.7	73.5	72.8	70.4											
65	83.1	82.8	82.2	82.4	82.1	81.8	80.7	79.5												
66	91.1	90.4	90.1	89.9	89.8	89.4	88.1													
67	92.7	92.4	92.4	92.2	91.8	91.3														
68	94.2	93.8	93.7	93.8	93.3															
69	95.2	95.0	94.7	94.8																
70	96.0	96.0	95.7																	
71	96.8	96.6																		
72	97.3																			

Table A16: Percentage Still Living and Retired, with R* = .50: Female Cohorts, 1982c -- 2001c

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	6.5	5.9	6.1	6.5	6.5	7.8	8.2	8.7	9.1	8.6	8.8	8.5	8.3	9.8	8.7	6.8	6.4	6.5	6.1	6.0
54	10.2	9.6	9.9	10.6	10.6	13.0	13.3	14.0	14.5	13.9	14.2	13.3	15.1	14.2	12.7	11.0	10.6	10.5	10.0	
55	14.3	14.4	14.2	15.5	16.1	18.3	19.3	20.0	20.9	19.8	20.2	20.6	20.0	19.1	17.8	16.0	15.4	15.3		
56	19.9	20.2	20.6	22.0	22.4	25.7	26.7	27.1	28.2	27.5	28.7	27.2	25.8	25.5	23.8	22.2	22.0			
57	25.4	25.9	26.9	28.1	28.4	31.7	33.0	33.5	34.7	35.2	34.3	32.4	31.1	30.4	29.3	27.3				
58	31.0	32.3	33.0	34.7	35.4	38.3	39.9	40.0	41.7	40.6	39.3	38.0	36.2	35.3	34.1					
59	37.8	38.7	39.9	42.0	42.5	45.1	47.3	47.4	46.8	45.7	44.6	43.3	41.7	40.2						
60	45.6	46.9	49.2	50.8	51.5	53.6	55.7	54.2	53.0	52.3	51.1	49.6	48.0							
61	55.2	57.2	59.5	60.5	61.6	63.1	63.3	61.7	60.7	59.8	59.1	57.0								
62	62.8	64.8	66.4	67.7	68.1	68.5	68.5	67.3	65.7	64.8	64.1									
63	69.9	71.7	72.6	73.3	72.9	73.0	73.2	71.9	70.4	69.3										
64	76.4	77.6	78.0	78.0	77.1	77.0	76.9	75.9	74.6											
65	83.8	83.8	84.4	84.0	83.1	82.9	83.1	81.9												
66	91.3	91.0	91.3	91.1	89.9	90.0	90.0													
67	93.2	92.8	93.1	93.0	91.8	91.9														
68	94.3	94.2	94.3	94.3	93.1															
69	95.3	95.1	95.3	95.0																
70	96.4	96.2	96.3																	
71	97.1	96.7																		
72	97.4																			

Table A17: Percentage Retirement Rates, with R* = 0: Male Cohorts 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	1.4	1.5	1.3	1.7	1.6	1.9	2.3	2.9	3.1	3.1	3.1	3.3	3.0	2.9	2.7	2.3	2.0	2.1	2.0	2.0
54	1.3	1.2	1.5	1.3	1.5	1.7	2.3	2.1	2.4	2.4	2.5	2.0	2.4	1.9	1.7	1.5	1.6	1.4	1.5	
55	1.3	1.8	1.7	2.1	2.4	3.2	2.9	3.5	3.3	3.0	2.9	3.1	2.9	2.3	2.1	2.3	2.0	1.9		
56	3.1	2.8	3.6	3.7	4.7	4.7	5.2	5.1	5.1	5.2	5.0	4.5	4.0	4.4	4.0	3.6	3.8			
57	3.7	4.2	4.4	5.5	5.2	6.0	5.7	5.9	5.2	5.6	4.7	4.2	4.1	4.5	4.1	3.6				
58	5.0	4.8	5.7	5.9	6.8	6.3	6.0	5.9	5.5	4.8	4.6	4.9	4.6	4.4	4.0					
59	5.9	6.9	7.4	7.5	7.4	7.1	7.3	7.1	5.9	5.7	5.4	5.6	5.2	5.0						
60	8.2	9.2	9.0	9.1	8.3	8.5	8.1	6.7	6.7	6.6	6.6	6.0	6.2							
61	12.9	13.6	14.2	13.5	13.0	12.9	11.0	10.7	10.5	10.2	9.3	9.1								
62	14.2	13.2	13.0	12.9	11.6	10.4	10.2	10.2	9.6	9.2	8.1									
63	15.2	13.8	12.7	11.8	10.6	10.1	10.3	9.2	8.6	8.2										
64	14.8	13.9	12.9	12.4	11.0	11.9	10.4	9.7	9.2											
65	18.3	16.3	15.4	14.6	14.3	13.6	12.9	12.5												
66	37.8	37.0	35.0	34.1	35.1	31.4	29.7													
67	22.1	20.2	22.7	20.6	19.1	19.2														
68	16.1	16.2	15.0	15.3	13.6															
69	16.7	15.3	14.0	14.5																
70	16.3	16.0	12.4																	
71	14.8	13.5																		
72	15.3																			

Table A18: Percentage Retirement Rates, with R* = 0: Female Cohorts 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.1	2.1	2.1	2.5	2.2	2.8	2.6	3.1	3.1	3.1	3.4	3.4	3.4	3.7	3.6	2.7	2.5	2.6	2.4	2.4
54	2.2	2.0	1.7	2.2	2.4	2.7	3.0	3.1	3.0	3.1	2.9	2.8	3.4	3.2	2.4	2.2	2.2	2.2	1.8	
55	2.5	2.2	3.1	2.6	2.9	3.2	3.9	4.1	4.5	4.2	4.0	4.4	4.3	3.3	3.6	3.1	2.9	2.6		
56	4.1	4.7	4.2	4.9	5.1	5.9	5.8	5.9	6.0	6.1	6.5	5.9	4.8	6.3	4.8	4.7	5.0			
57	5.1	4.8	5.0	5.7	5.6	6.3	6.6	6.6	6.2	6.8	6.2	5.2	5.9	4.9	4.9	4.6				
58	5.6	5.6	5.8	6.8	6.6	7.4	7.1	7.0	7.3	7.0	6.1	7.2	5.3	5.4	5.2					
59	6.3	7.2	7.1	8.3	8.7	8.1	8.3	8.8	7.7	6.5	7.8	6.2	6.4	5.6						
60	8.5	8.9	9.6	10.2	11.2	9.8	10.9	9.7	7.7	9.4	7.6	7.1	6.5							
61	13.4	15.5	16.5	15.9	15.6	15.4	15.2	13.0	13.5	13.1	12.8	11.8								
62	14.5	15.3	15.0	15.1	15.2	14.5	12.0	13.4	10.6	10.1	10.1									
63	16.7	16.8	15.9	14.7	13.3	11.3	13.9	11.5	10.3	10.2										
64	17.0	16.8	14.8	14.3	12.3	16.1	10.9	12.1	10.9											
65	20.8	19.2	17.1	15.6	16.8	13.6	15.2	13.9												
66	40.8	37.2	36.4	37.1	34.8	34.1	35.2													
67	23.1	21.4	25.3	20.8	20.7	19.6														
68	16.3	19.6	14.5	17.3	14.1															
69	16.8	16.3	16.3	14.6																
70	19.6	17.6	16.1																	
71	13.4	13.7																		
72	14.4																			

Table A19: Percentage Retirement Rates, with R* = .10: Male Cohorts 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	1.7	1.8	1.7	2.1	1.9	2.3	2.8	3.3	3.5	3.7	3.8	4.0	3.6	3.7	3.3	2.7	2.5	2.6	2.4	2.4
54	1.6	1.4	1.6	1.6	1.9	2.2	2.7	2.8	3.0	3.1	3.0	2.6	3.0	2.4	2.1	2.1	2.0	1.8	1.8	
55	1.7	2.2	2.2	2.4	2.9	3.7	3.5	4.1	4.2	3.8	3.6	3.9	3.5	2.8	2.6	2.6	2.5	2.3		
56	3.9	3.8	4.3	4.6	5.8	5.9	6.5	6.2	6.0	6.4	6.6	5.7	4.9	5.7	5.4	4.9	5.0			
57	4.6	4.7	5.2	6.5	6.3	6.9	6.8	6.6	6.4	6.5	5.3	5.1	5.2	5.1	5.1	4.4				
58	5.4	5.3	6.6	6.9	7.4	7.4	6.7	7.1	6.4	5.6	5.4	5.6	5.3	5.2	4.8					
59	6.8	8.0	8.6	8.4	8.7	8.0	8.5	8.3	7.0	6.7	6.7	6.6	6.4	6.0						
60	9.5	10.1	10.5	10.6	9.8	10.0	9.8	7.8	7.7	7.7	7.6	7.2	7.0							
61	15.3	15.4	16.4	15.5	15.5	14.7	13.2	12.6	12.3	11.6	11.0	10.8								
62	15.4	15.2	13.9	14.0	12.2	11.7	10.8	11.1	10.5	10.1	9.3									
63	16.8	15.3	14.1	13.3	11.9	11.6	11.5	11.0	9.7	9.7										
64	16.2	15.8	14.7	14.0	12.7	13.4	11.5	10.7	10.5											
65	21.8	19.0	18.1	17.5	17.3	16.6	16.0	15.5												
66	43.8	42.4	41.5	41.0	40.5	37.0	35.3													
67	21.4	21.2	22.2	22.7	18.9	19.5														
68	17.9	17.6	17.1	18.2	15.6															
69	18.0	18.3	15.0	17.4																
70	17.5	16.4	17.0																	
71	18.1	16.0																		
72	16.1																			

Table A20: Percentage Retirement Rates, with R* = .10: Female Cohorts 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.4	2.5	2.4	2.8	2.6	3.3	3.0	3.5	3.6	3.6	3.9	4.0	3.8	5.0	4.4	3.1	3.0	3.0	2.7	2.8
54	2.4	2.2	2.0	2.6	2.7	3.0	3.2	3.4	3.5	3.4	3.6	3.2	4.7	3.9	2.9	2.7	2.7	2.6	2.3	
55	3.0	2.6	3.5	2.9	3.1	4.0	4.3	4.7	5.2	4.8	4.4	6.1	4.6	3.6	4.0	3.4	3.3	3.1		
56	4.8	5.3	4.5	5.6	5.8	6.1	6.7	6.6	6.7	7.0	8.4	6.6	5.7	6.6	5.6	5.6	5.9			
57	5.3	5.2	5.6	6.0	6.0	6.9	7.3	7.4	6.8	8.4	6.6	5.8	5.7	5.3	5.5	5.1				
58	5.9	5.9	6.2	7.3	7.4	8.0	7.6	7.6	8.9	7.4	6.6	6.8	5.9	5.7	5.6					
59	6.9	7.7	7.9	9.3	9.2	8.6	9.1	10.3	7.9	7.1	7.4	6.7	6.8	6.0						
60	9.2	9.9	10.2	10.7	11.7	10.7	12.1	10.2	8.8	9.3	8.3	7.8	7.1							
61	14.6	16.6	18.0	17.1	17.4	18.2	16.4	14.3	14.0	14.1	14.3	13.0								
62	15.0	15.9	16.0	16.1	15.7	15.0	12.5	13.5	11.4	10.6	10.7									
63	17.7	17.1	16.2	15.7	13.7	12.0	13.9	12.0	10.9	11.1										
64	18.0	17.5	15.2	15.4	12.9	15.5	12.1	12.7	11.9											
65	22.7	21.1	19.6	17.6	18.5	15.4	16.7	15.0												
66	44.3	41.2	40.8	40.4	37.6	36.2	37.4													
67	24.4	21.5	22.7	19.4	20.3	20.9														
68	15.6	18.8	13.5	18.1	13.9															
69	17.3	15.8	16.4	15.7																
70	18.9	17.4	17.9																	
71	13.9	14.8																		
72	14.0																			

Table A21: Percentage Retirement Rates, with R* = .25: Male Cohorts 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.5	2.4	2.4	2.9	2.7	3.2	4.1	4.7	5.0	5.0	5.0	5.4	4.8	5.1	4.5	3.8	3.4	3.7	3.4	3.4
54	2.1	1.8	2.3	2.1	2.4	3.3	3.7	3.7	4.0	4.1	4.1	3.3	3.9	2.9	2.5	2.8	2.6	2.4	2.3	
55	2.2	2.9	3.0	3.0	4.0	4.7	4.7	5.4	5.1	4.7	4.2	5.0	4.3	3.6	3.6	3.5	3.6	3.1		
56	5.2	4.8	5.4	6.2	7.4	7.6	8.1	7.9	7.5	7.8	8.0	6.8	6.3	6.8	6.6	6.1	6.2			
57	5.4	5.9	6.4	8.0	7.7	8.3	8.0	7.6	7.4	7.6	6.0	6.2	6.0	5.8	5.9	5.4				
58	6.4	6.7	8.2	8.2	8.7	8.3	8.0	8.4	7.7	6.4	6.7	6.5	6.2	6.3	5.7					
59	8.1	9.7	9.8	9.8	9.9	9.4	9.5	9.5	7.9	8.0	7.2	7.5	7.8	6.9						
60	11.7	11.7	12.4	12.6	11.7	12.2	11.6	9.6	9.1	8.9	9.0	8.8	7.9							
61	17.9	17.6	18.4	17.4	17.2	16.6	14.4	14.4	14.5	13.8	12.7	12.1								
62	16.6	16.3	15.3	15.6	13.7	12.3	12.0	11.8	11.2	11.4	10.0									
63	18.6	16.7	15.4	14.9	13.0	13.2	12.4	12.8	10.9	10.2										
64	17.3	17.6	16.2	15.1	14.5	14.3	13.3	12.4	12.4											
65	27.0	25.0	23.4	23.2	23.3	22.0	20.7	20.0												
66	48.0	47.1	46.8	46.3	44.1	42.2	39.8													
67	21.3	20.9	22.0	22.7	20.8	20.9														
68	20.0	19.4	17.6	19.4	16.6															
69	21.5	18.7	16.2	17.5																
70	19.7	20.5	17.9																	
71	21.1	17.8																		
72	16.1																			

Table A22: Percentage Retirement Rates, with R* = .25: Female Cohorts 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	3.4	3.4	3.3	3.9	3.6	4.5	4.3	4.9	5.0	5.1	5.3	5.2	5.1	7.0	6.0	4.3	4.0	4.2	3.7	3.8
54	3.2	2.9	3.0	3.0	3.3	3.5	4.5	4.0	4.1	4.2	4.6	4.1	6.4	4.4	3.6	3.5	3.5	3.3	3.1	
55	4.0	3.8	4.2	4.6	4.7	5.1	5.3	5.9	6.7	5.8	5.5	7.5	5.0	4.3	4.6	4.2	4.2	3.9		
56	5.4	6.1	5.8	6.0	6.3	7.5	7.9	8.3	8.1	8.7	10.5	7.5	6.5	7.1	6.5	6.6	6.9			
57	6.0	6.0	6.3	6.9	6.8	7.8	8.1	8.4	7.8	9.7	7.4	6.4	6.5	6.0	6.3	5.9				
58	6.7	7.0	7.3	8.3	8.5	8.7	8.7	8.8	10.2	7.8	6.9	7.5	6.7	6.5	6.4					
59	7.9	8.7	9.2	10.3	10.3	9.7	11.1	12.0	8.4	7.8	8.0	7.4	7.5	6.9						
60	11.1	11.2	12.3	12.6	13.3	13.2	14.0	10.6	9.7	10.4	9.3	9.2	8.4							
61	16.5	18.5	19.5	18.7	19.2	19.8	17.3	15.9	15.8	15.2	15.8	14.0								
62	15.7	16.9	16.6	16.9	17.3	14.9	13.5	14.1	11.9	11.8	11.4									
63	18.8	18.1	17.3	17.3	14.6	13.0	14.5	12.6	12.4	11.9										
64	19.2	19.6	17.2	16.0	14.9	15.4	13.0	13.3	12.8											
65	28.4	24.3	23.8	21.0	21.0	18.7	20.6	18.6												
66	47.4	45.1	45.0	43.3	40.6	41.0	39.6													
67	23.0	18.7	21.6	21.3	21.7	19.4														
68	15.1	17.8	14.6	16.9	14.1															
69	17.9	17.2	18.1	15.9																
70	20.4	20.0	21.2																	
71	15.4	17.1																		
72	13.8																			

Table A23: Percentage Retirement Rates, with R* = .50: Male Cohorts 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	4.5	4.2	4.3	4.8	4.6	5.9	7.5	8.1	8.2	8.2	8.0	8.1	7.4	7.5	6.6	5.7	5.4	5.8	5.4	5.4
54	2.8	3.0	3.4	3.2	3.9	5.4	5.7	5.7	5.6	5.5	5.1	4.4	4.8	3.8	3.8	3.8	3.8	3.4	3.2	
55	4.1	4.4	4.2	5.1	6.7	6.8	6.9	7.6	6.9	6.6	6.2	6.7	5.9	5.3	5.4	5.4	5.4	4.8		
56	7.1	6.2	7.4	9.1	9.5	10.0	10.3	9.3	9.0	9.5	9.3	8.2	7.7	8.1	8.1	7.5	7.4			
57	6.7	7.7	8.6	9.8	9.7	10.0	9.0	9.4	9.0	8.9	7.4	7.5	7.2	7.2	7.2	6.4				
58	8.3	9.5	10.2	10.3	10.5	10.5	10.1	9.9	9.3	8.0	7.9	7.7	7.9	8.0	7.0					
59	10.8	11.6	12.4	12.1	11.2	10.8	10.9	10.6	9.0	9.4	8.6	9.5	8.8	8.2						
60	14.9	15.1	15.9	15.2	15.4	14.7	14.2	12.3	11.8	11.3	11.3	10.7	10.2							
61	19.9	20.1	20.1	20.0	18.3	18.0	15.6	16.4	15.3	15.7	14.1	14.0								
62	19.1	16.9	16.5	17.1	15.2	13.6	13.6	13.7	13.2	13.0	11.4									
63	20.2	19.0	17.5	16.2	15.4	16.0	14.7	14.2	13.7	12.2										
64	20.7	20.5	17.7	17.5	16.5	16.2	16.6	15.8	13.7											
65	34.3	33.7	32.9	31.3	31.9	30.8	29.6	27.5												
66	51.8	48.4	49.5	48.8	48.0	46.7	42.0													
67	20.1	22.4	25.6	26.0	22.4	19.6														
68	23.7	21.3	20.4	24.3	20.1															
69	19.8	20.8	18.1	18.6																
70	19.8	23.7	20.4																	
71	23.2	20.3																		
72	17.0																			

Table A24: Percentage Retirement Rates, with R* = .50: Female Cohorts 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	6.3	5.8	6.0	6.3	6.3	7.6	7.8	8.4	8.7	8.2	8.6	8.3	8.2	9.9	8.6	6.7	6.3	6.3	5.8	5.7
54	4.3	4.6	4.4	4.6	4.8	5.9	6.0	6.1	6.3	6.2	6.4	5.7	7.8	5.1	4.5	4.6	4.7	4.4	4.3	
55	5.4	5.6	5.3	6.0	6.5	6.7	7.3	7.6	8.0	7.4	7.5	9.1	6.3	6.1	6.2	6.0	5.6	5.6		
56	7.3	7.4	8.1	8.4	8.3	9.6	9.7	9.7	9.9	10.4	11.7	8.9	7.6	8.3	7.7	8.0	8.3			
57	7.6	8.0	8.2	8.3	8.6	8.9	9.6	9.9	9.8	11.3	8.5	7.6	7.7	7.2	7.6	7.1				
58	8.3	9.2	9.0	9.7	10.2	10.4	10.7	10.6	11.3	8.7	8.1	8.8	7.9	7.5	7.2					
59	10.6	10.1	11.0	11.8	11.8	11.8	12.9	12.9	9.1	8.9	9.4	9.1	8.9	8.0						
60	13.2	14.1	16.2	15.6	16.4	16.2	16.8	13.4	12.0	12.7	12.3	11.6	11.3							
61	18.7	20.1	21.1	20.4	22.0	21.1	17.8	17.7	17.0	16.9	17.2	15.6								
62	17.9	18.9	17.4	18.6	17.5	15.5	14.7	15.6	12.8	12.7	12.7									
63	20.3	20.1	19.4	18.1	15.4	15.2	15.7	14.5	14.4	13.1										
64	22.2	21.6	20.2	18.2	16.5	15.0	15.2	15.0	14.6											
65	32.7	27.9	30.3	28.1	27.2	26.6	27.0	26.0												
66	49.2	46.8	46.5	46.3	42.2	43.6	42.9													
67	21.9	19.6	20.7	21.4	20.4	20.0														
68	17.3	20.4	17.5	19.3	15.3															
69	18.6	16.5	19.4	15.5																
70	26.5	24.0	21.3																	
71	17.6	13.8																		
72	14.6																			

Table A25: Percentage Still Living and Retired, with R* = 0: Male Cohorts, 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	1.4	1.5	1.3	1.7	1.6	1.9	2.3	2.9	3.1	3.1	3.1	3.3	3.0	2.9	2.7	2.3	2.0	2.1	2.0	2.0
54	2.6	2.6	2.7	3.0	3.1	3.6	4.5	5.0	5.5	5.3	5.5	5.2	5.2	4.8	4.3	3.7	3.4	3.5	3.4	
55	3.8	4.2	4.3	4.9	5.3	6.5	7.0	7.9	8.3	8.0	8.0	8.1	7.9	6.8	6.3	5.8	5.3	5.1		
56	6.6	6.7	7.7	8.3	9.6	10.7	11.7	12.3	12.8	12.6	12.5	12.1	11.5	10.8	9.9	9.1	8.8			
57	9.9	10.5	11.5	13.2	14.1	15.9	16.6	17.3	17.2	17.4	16.4	15.6	15.0	14.7	13.6	12.3				
58	14.3	14.6	16.4	18.1	19.8	21.1	21.4	22.0	21.5	21.2	20.1	19.7	18.9	18.3	16.9					
59	19.1	20.3	22.5	24.1	25.5	26.4	26.9	27.3	26.0	25.5	24.4	24.1	23.0	22.3						
60	25.6	27.4	29.2	30.7	31.6	32.4	32.7	32.0	30.9	30.3	29.2	28.5	27.7							
61	35.0	37.1	39.0	39.9	40.3	41.0	39.8	39.1	38.0	37.2	35.7	34.9								
62	44.1	45.1	46.8	47.6	47.1	47.0	45.7	45.1	43.8	42.8	40.7									
63	52.3	52.6	53.3	53.5	52.5	52.2	51.1	49.9	48.5	47.4										
64	59.3	59.0	59.2	59.2	57.6	57.7	56.0	54.6	53.2											
65	66.6	65.6	65.3	65.0	63.5	63.3	61.7	60.1												
66	79.2	78.2	77.4	76.8	76.2	74.7	73.0													
67	83.6	82.6	82.4	81.5	80.6	79.5														
68	86.2	85.3	84.9	84.2	83.2															
69	88.4	87.5	86.9	86.3																
70	90.2	89.3	88.5																	
71	91.6	90.7																		
72	92.9																			

Table A26: Percentage Still Living and Retired, with R* = 0: Female Cohorts, 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.1	2.1	2.1	2.5	2.2	2.8	2.6	3.1	3.1	3.1	3.4	3.4	3.4	3.7	3.6	2.7	2.5	2.6	2.4	2.4
54	4.1	3.9	3.8	4.7	4.6	5.4	5.5	6.2	6.1	6.1	6.2	6.0	6.7	6.8	6.0	4.9	4.6	4.7	4.2	
55	6.2	6.3	6.4	7.2	7.3	8.5	8.8	9.7	9.9	9.7	9.6	10.0	10.4	9.5	9.1	7.6	7.2	7.1		
56	9.8	10.0	10.1	11.2	11.4	13.1	13.9	14.8	15.0	14.9	15.3	15.0	14.5	15.0	13.3	11.8	11.7			
57	14.1	13.9	14.4	15.9	16.1	18.4	19.3	20.0	20.1	20.5	20.4	19.3	19.4	19.1	17.5	15.7				
58	18.5	18.5	19.1	21.5	21.4	24.2	24.9	25.4	25.7	25.9	25.1	25.0	23.5	23.3	21.7					
59	23.5	24.2	24.7	27.9	28.1	30.1	30.9	31.8	31.2	30.5	30.8	29.5	28.4	27.6						
60	29.9	30.7	31.8	35.1	36.0	36.8	38.3	38.2	36.5	36.9	36.0	34.4	32.9							
61	39.0	41.3	42.9	45.3	45.9	46.4	47.5	46.2	45.0	45.1	44.1	42.1								
62	47.6	50.2	51.3	53.4	53.9	54.1	53.7	53.3	50.7	50.6	49.6									
63	56.1	58.4	59.0	60.2	60.0	59.3	60.0	58.6	55.7	55.6										
64	63.5	65.3	65.0	65.8	64.7	65.7	64.4	63.5	60.4											
65	71.1	72.0	70.8	71.1	70.7	70.4	69.7	68.6												
66	82.9	82.4	81.4	81.8	80.9	80.4	80.4													
67	86.8	86.1	86.0	85.5	84.7	84.3														
68	88.9	88.8	88.0	87.9	86.9															
69	90.7	90.6	90.0	89.7																
70	92.5	92.2	91.6																	
71	93.5	93.2																		
72	94.4																			

Table A27: Percentage Still Living and Retired, with R* = .10: Male Cohorts, 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	1.7	1.8	1.7	2.1	1.9	2.3	2.8	3.3	3.5	3.7	3.8	4.0	3.6	3.7	3.3	2.7	2.5	2.6	2.4	2.4
54	3.1	3.2	3.3	3.6	3.7	4.5	5.3	5.9	6.4	6.6	6.7	6.4	6.4	6.0	5.2	4.8	4.3	4.4	4.1	
55	4.7	5.1	5.3	5.8	6.4	7.8	8.4	9.6	10.0	9.9	9.8	9.9	9.6	8.5	7.6	7.1	6.6	6.4		
56	8.3	8.5	9.2	10.0	11.7	13.1	14.3	14.9	15.2	15.5	15.6	14.9	13.9	13.6	12.5	11.6	11.2			
57	12.4	12.7	13.7	15.7	17.1	19.0	20.0	20.3	20.5	20.8	19.9	19.1	18.3	17.9	16.8	15.4				
58	16.9	17.1	19.3	21.4	23.0	24.8	25.1	25.7	25.4	25.1	24.1	23.5	22.5	22.0	20.8					
59	22.3	23.5	26.0	27.8	29.6	30.6	31.2	31.8	30.5	30.0	29.1	28.5	27.4	26.6						
60	29.5	31.0	33.6	35.2	36.4	37.3	37.7	36.9	35.8	35.3	34.3	33.5	32.5							
61	40.1	41.5	44.3	45.1	46.1	46.4	45.7	44.6	43.5	42.6	41.4	40.6								
62	49.2	50.2	51.9	52.6	52.5	52.4	51.3	50.6	49.3	48.3	46.6									
63	57.6	57.6	58.4	58.8	57.9	57.8	56.8	55.9	54.2	53.1										
64	64.3	64.3	64.5	64.4	63.2	63.3	61.6	60.4	58.9											
65	71.9	71.0	70.7	70.5	69.5	69.3	67.7	66.4												
66	84.2	83.2	82.8	82.6	81.7	80.6	79.0													
67	87.5	86.7	86.6	86.5	85.1	84.3														
68	89.6	89.0	88.8	88.8	87.4															
69	91.4	91.0	90.4	90.6																
70	92.9	92.3	91.9																	
71	94.1	93.5																		
72	95																			

Table A28: Percentage Still Living and Retired, with R* = .10: Female Cohorts, 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.4	2.5	2.4	2.8	2.6	3.3	3.0	3.5	3.6	3.6	3.9	4.0	3.8	5.0	4.4	3.1	3.0	3.0	2.7	2.8
54	4.5	4.4	4.4	5.3	5.2	6.2	6.2	6.9	7.0	7.0	7.1	6.8	8.4	8.6	7.2	5.8	5.4	5.5	5.0	
55	7.1	7.1	7.2	8.2	8.3	9.5	9.8	10.8	11.4	11.0	11.0	12.2	12.3	11.6	10.6	8.7	8.4	8.3		
56	11.2	11.3	11.2	12.6	12.8	14.6	15.6	16.4	17.1	17.0	18.3	17.8	17.1	17.3	15.4	13.7	13.6			
57	15.5	15.5	16.0	17.6	17.7	20.2	21.5	22.2	22.4	23.7	23.5	22.4	21.7	21.5	19.9	17.9				
58	20.2	20.2	20.9	23.4	23.6	26.4	27.2	27.8	29.1	29.2	28.4	27.6	26.1	25.8	24.3					
59	25.4	26.2	27.0	30.3	30.5	32.6	33.7	35.0	34.4	34.1	33.5	32.2	31.1	30.1						
60	32.1	33.1	34.4	37.7	38.4	39.6	41.6	41.6	40.1	40.1	38.9	37.4	35.8							
61	41.7	44.1	46.1	48.2	49.0	50.5	51.0	49.8	48.4	48.5	47.6	45.5								
62	50.3	52.9	54.6	56.5	57.0	57.8	57.0	56.5	54.1	53.8	53.2									
63	58.8	60.9	61.9	63.2	62.7	62.8	63.0	61.6	59.1	58.9										
64	66.2	67.7	67.6	68.8	67.4	68.5	67.3	66.4	63.8											
65	73.9	74.5	73.9	74.3	73.4	73.3	72.7	71.4												
66	85.5	85.0	84.4	84.7	83.4	83.0	82.9													
67	88.9	88.1	87.9	87.6	86.8	86.4														
68	90.6	90.3	89.5	89.7	88.5															
69	92.2	91.8	91.3	91.3																
70	93.7	93.3	92.7																	
71	94.6	94.2																		
72	95.3																			

Table A29: Percentage Still Living and Retired, with R* = .25: Male Cohorts, 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	2.5	2.4	2.4	2.9	2.7	3.2	4.1	4.7	5.0	5.0	5.0	5.4	4.8	5.1	4.5	3.8	3.4	3.7	3.4	3.4
54	4.3	4.2	4.6	4.8	4.9	6.3	7.5	8.0	8.7	8.7	8.8	8.3	8.3	7.7	6.8	6.3	5.7	5.9	5.5	
55	6.3	6.6	7.1	7.5	8.6	10.5	11.5	12.7	13.0	12.7	12.5	12.8	12.1	10.9	10.0	9.4	9.0	8.6		
56	10.9	10.9	12.0	13.1	15.3	17.1	18.5	19.3	19.4	19.4	19.3	18.5	17.5	16.8	15.8	14.8	14.5			
57	15.6	16.0	17.3	19.8	21.6	23.9	24.9	25.2	25.2	25.3	24.0	23.4	22.3	21.4	20.6	19.3				
58	20.8	21.5	23.9	26.3	28.2	30.0	30.6	31.2	30.7	30.0	28.9	28.2	27.0	26.2	25.1					
59	26.9	28.8	31.3	33.2	35.1	36.3	37.0	37.6	36.0	35.4	33.9	33.5	32.6	31.2						
60	35.3	36.9	39.5	41.4	42.5	43.9	44.1	43.4	41.7	41.0	39.7	39.3	37.9							
61	46.6	47.8	50.4	51.4	52.2	53.0	51.9	51.3	50.0	49.0	47.2	46.5								
62	55.3	56.0	57.8	58.8	58.6	58.6	57.4	56.9	55.4	54.6	52.3									
63	63.5	63.3	64.2	64.8	63.8	63.9	62.6	62.2	60.2	59.2										
64	69.6	69.7	69.9	70.0	69.0	68.9	67.4	66.8	65.1											
65	77.8	77.2	76.9	76.9	76.1	75.7	74.2	73.3												
66	88.3	87.8	87.6	87.5	86.6	85.9	84.4													
67	90.7	90.3	90.2	90.3	89.4	88.8														
68	92.5	92.1	92.0	92.1	91.1															
69	94.1	93.6	93.3	93.4																
70	95.2	94.8	94.4																	
71	96.2	95.7																		
72	96.8																			

Table A30: Percentage Still Living and Retired, with R* = .25: Female Cohorts, 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	3.4	3.4	3.3	3.9	3.6	4.5	4.3	4.9	5.0	5.1	5.3	5.2	5.1	7.0	6.0	4.3	4.0	4.2	3.7	3.8
54	6.3	6.0	5.8	6.9	6.8	7.9	8.3	8.8	9.0	9.1	9.3	8.8	11.0	10.9	9.3	7.5	7.2	7.2	6.6	
55	9.5	9.2	9.4	10.5	10.5	11.9	12.8	13.5	14.4	13.8	14.1	15.4	15.2	14.5	13.3	11.2	10.9	10.7		
56	13.8	14.3	14.3	15.5	15.8	18.1	19.3	20.2	21.1	21.0	22.8	21.4	20.5	20.5	18.7	17.0	16.8			
57	18.6	19.0	19.4	21.0	21.1	24.1	25.4	26.4	26.9	28.4	28.3	26.3	25.4	25.1	23.6	21.6				
58	23.7	24.3	25.0	27.4	27.6	30.4	31.7	32.6	34.1	33.9	33.1	31.7	30.3	29.8	28.4					
59	29.4	30.5	31.6	34.6	34.8	36.9	39.1	40.6	39.4	38.9	38.2	36.6	35.4	34.5						
60	36.9	37.9	40.0	42.7	43.2	45.1	47.5	46.7	45.2	45.1	43.9	42.3	40.8							
61	47.0	49.2	51.5	53.3	54.0	55.9	56.4	55.1	53.8	53.4	52.6	50.3								
62	55.1	57.7	59.4	61.1	61.8	62.4	62.2	61.3	59.1	58.8	58.0									
63	63.3	65.2	66.3	67.7	67.3	67.3	67.6	66.1	64.0	63.7										
64	70.4	72.0	72.0	72.9	72.1	72.1	71.7	70.6	68.6											
65	78.7	78.8	78.6	78.6	77.9	77.4	77.5	76.0												
66	88.7	88.3	88.3	87.8	86.8	86.6	86.4													
67	91.3	90.5	90.7	90.3	89.6	89.2														
68	92.6	92.2	92.1	92.0	91.1															
69	93.9	93.5	93.5	93.3																
70	95.1	94.8	94.9																	
71	95.9	95.6																		
72	96.4																			

Table A31: Percentage Still Living and Retired, with R* = .50: Male Cohorts, 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	4.5	4.2	4.3	4.8	4.6	5.9	7.5	8.1	8.2	8.2	8.0	8.1	7.4	7.5	6.6	5.7	5.4	5.8	5.4	5.4
54	6.9	6.9	7.3	7.7	8.1	10.7	12.5	13.1	13.2	12.9	12.5	12.0	11.6	10.8	9.9	9.1	8.8	8.8	8.3	
55	10.4	10.7	11.1	12.2	14.1	16.5	18.2	19.4	18.9	18.5	17.6	17.7	16.6	15.3	14.7	13.7	13.6	13.0		
56	16.4	16.0	17.3	19.9	22.0	24.7	26.3	26.6	26.0	25.9	25.1	24.3	22.9	22.0	21.4	20.1	19.9			
57	21.9	22.3	24.2	27.5	29.2	31.9	32.7	33.2	32.4	32.3	30.4	29.8	28.2	27.4	26.9	25.0				
58	28.1	29.4	31.7	34.7	36.4	38.8	39.3	39.6	38.5	37.5	35.8	35.0	33.8	33.0	31.9					
59	35.6	37.3	40.0	42.4	43.3	45.2	45.7	45.8	43.8	43.2	41.2	41.1	39.4	38.3						
60	44.9	46.6	49.2	50.9	51.9	53.0	53.1	52.3	50.3	49.5	47.7	47.3	45.5							
61	55.6	57.2	59.2	60.6	60.5	61.3	60.2	59.9	57.7	57.3	55.0	54.6								
62	64.0	64.2	65.6	67.1	66.4	66.3	65.4	65.3	63.1	62.7	59.9									
63	71.1	70.8	71.5	72.3	71.4	71.6	70.4	70.0	68.1	67.0										
64	76.9	76.6	76.4	77.0	76.0	76.1	75.2	74.6	72.4											
65	84.8	84.4	84.2	84.1	83.6	83.5	82.4	81.5												
66	92.7	91.9	92.0	91.9	91.4	91.2	89.9													
67	94.1	93.7	94.0	94.0	93.3	92.9														
68	95.4	95.0	95.1	95.3	94.6															
69	96.3	96.0	96.0	96.2																
70	97.1	96.9	96.8																	
71	97.7	97.5																		
72	98.1																			

Table A32: Percentage Still Living and Retired, with R* = .50: Female Cohorts, 1982c -- 2001c, Employees Only

Age	Cohort																			
	1982c	1983c	1984c	1985c	1986c	1987c	1988c	1989c	1990c	1991c	1992c	1993c	1994c	1995c	1996c	1997c	1998c	1999c	2000c	2001c
52	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
53	6.3	5.8	6.0	6.3	6.3	7.6	7.8	8.4	8.7	8.2	8.6	8.3	8.2	9.9	8.6	6.7	6.3	6.3	5.8	5.7
54	9.8	9.6	9.6	10.2	10.3	12.6	12.9	13.6	14.0	13.5	14.0	13.0	15.1	14.3	12.5	10.8	10.5	10.3	9.7	
55	14.0	14.2	13.9	15.1	15.7	17.8	18.8	19.6	20.5	19.5	20.1	20.6	20.1	19.2	17.7	15.9	15.2	15.1		
56	19.7	20.0	20.3	21.7	22.1	25.2	26.2	26.9	27.9	27.5	29.1	27.4	25.9	25.7	23.8	22.4	22.1			
57	25.2	25.7	26.4	27.8	28.2	31.4	32.8	33.5	34.6	35.4	34.8	32.7	31.4	30.8	29.4	27.7				
58	30.8	31.9	32.6	34.5	35.2	38.1	39.6	40.1	41.7	40.9	39.9	38.4	36.6	35.8	34.4					
59	37.8	38.4	39.6	42.0	42.5	45.1	47.2	47.7	46.8	46.0	45.4	43.8	42.2	40.9						
60	45.7	46.8	49.2	50.8	51.7	53.8	56.0	54.6	53.1	52.7	52.0	50.2	48.6							
61	55.6	57.1	59.7	60.7	62.1	63.4	63.7	62.5	60.9	60.5	60.2	57.9								
62	63.2	65.0	66.6	68.0	68.6	69.0	68.9	68.2	65.8	65.5	65.2									
63	70.4	72.0	72.9	73.6	73.4	73.6	73.8	72.8	70.7	70.1										
64	77.0	78.0	78.3	78.4	77.7	77.5	77.6	76.8	74.9											
65	84.5	84.1	84.9	84.4	83.8	83.5	83.7	82.8												
66	92.0	91.5	91.9	91.7	90.6	90.7	90.7													
67	93.8	93.2	93.6	93.5	92.4	92.5														
68	94.8	94.5	94.7	94.7	93.6															
69	95.8	95.4	95.6	95.6																
70	96.8	96.4	96.6																	
71	97.4	96.9																		
72	97.8																			

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